Hunterian Lectures

ON

THE SURGERY OF THE LYMPHATIC SYSTEM.

BY

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LECTURE I.

MR. PRESIDENT, LADIES, AND GENTLEMEN,—Although for the sake of brevity I have chosen an inclusive title for these lectures, you will hardly expect a complete survey of such a wide field. I propose to exclude the lymphatic glands from consideration and to deal only with the growing edge of my subject—the surgery of the lymphatic vessels and spaces.

My principal theme will be the surgery of dropsy, using this term as defined by Professor Starling to denote "either an increased amount of fluid in the connective tissue spaces, which is sometimes designated anasarca or oedema, or an accumulation of fluid in the serous spaces of the body, as in the conditions of hydrothorax and ascites."

The subject of lymphatic anatomy, which necessarily forms the basis of lymphatic surgery, is still denied by most teachers of anatomy the prominence due to its practical importance. This is the more surprising since our knowledge of the subject, as embodied in Sappey's great folio, and in the more recent work of Poirier, Cuneo, and Leaf, is extensive and precise, in spite of the numerous gaps which still exist. Quite recently Professor E. H. Starling's work, *The Fluids of the Body*, seems to have placed lymphatic physiology on a basis as secure as that occupied by the anatomy of the subject. On the other hand, the problems presented to the surgeon by disease of lymphatic vessels and spaces have, perhaps, hitherto received less than their share of attention. In the evolution of surgery two phases can often be traced, which may be respectively called the ablational and the conservative phases. The rudimentary condition of lymphatic surgery is shown by the almost exclusively ablational methods hitherto employed. Thus, amputation or excision of the diseased tissue have been the methods of choice for lymphatic oedema, while serous effusions are run to waste through a cannula.

The conservative phase of lymphatic surgery is that to which I shall mainly direct your attention. For the aspect of the subject is being changed by the idea of the internal drainage of serous effusions introduced into it by my senior colleague Dr. Essex Wynter, and by the use of capillary attraction along silk threads as a substitute for destroyed lymphatic vessels in lymphatic oedema, a method which I introduced two years ago.

My material divides itself into three sections: (*a*) The surgery of lymphatic oedema; (*b*) the surgery of serous effusions; (*c*) cancer surgery as a branch of the ablational side of lymphatic surgery. We will first consider the various forms of lymphatic oedema.

SOLID OEDEMA DUE TO CANCER.

Dropsy associated with cancer may show itself as a serous effusion in the pleura or peritoneum, or as a local oedema. In the latter form it is most frequently seen in the arm. Less commonly it occurs upon the chest, for, as I have shown, in its early stage *cancer en cuirasse* is simply a lymphatic oedema of the skin, and no cancerous elements are at first present in the thickened skin. I show you two sections which illustrate this fact.

THE BRAWNY OR DROPSICAL ARM OF BREAST CANCER.

A brawny arm develops in 16 per cent. of all cases of breast cancer. Its frequent occurrence depends upon the commencement of the growth in a situation close to the root of the limb, conveniently placed to menace its lines of lymphatic communication. The oedema often commences as a general swelling of the whole limb. In some cases it begins at the wrist and travels upwards; less commonly it begins at the shoulder and travels downwards, or it may first be noticed at the back of the elbow. Sometimes a sharp line of demarcation in the deltoid region separates the swelling from the normal tissues above. In other cases the shoulder shares in the swelling, which may in a late stage extend to the thoracic wall or to the opposite breast.

Of the 15 cases in which I have done lymphangioplasty in breast cancer, 8 have been on the right and 7 on the left side. Among 54 cases of brawny arm of which, apart from my operative series, I possess notes, 34 have been on the left side and 20 on the right side. The condition thus appears to be commoner on the left side. Occasionally in association with cuirass cancer both arms are affected.

Dropsical arm is associated with the more chronic forms of breast cancer. In the cases upon which I have operated an average period of six and a half years elapsed between the first sign of cancer and the development of the swollen arm. In one case the swelling took thirteen years to develop, in two others eleven years. At the opposite end of the scale are two cases in which only six and nine months respectively intervened between the onset of breast cancer and the swelling of the arm. The period of survival which may be expected after a dropsical arm has appeared is difficult to determine, but is not a long one, and probably averages under one year, though in very chronic cases it may exceed three years. Into this short period is usually crowded most of the physical agony caused by the disease. The dropsical arm acquires most of its importance from the excruciating pain which it causes—a pain which in the worst cases almost passes the limits of endurance. This pain is referred to the whole limb, and varies from a dull ache to an intolerable burning agony. It is accompanied by a heavy, leaden drag, due to the weight of the limb. The pain varies in intensity, and there may at first be periods of complete intermission. In several of my cases the pain, though diffuse, has been much worse in the palm of the hand than elsewhere. After a time paralysis of the limb supervenes. The movements of the fingers are the last to be lost. The oedema interferes with passive as well as with active movements of the joints. The elbow is usually held in a position of slight flexion, and can be moved only through a small arc of 30 degrees or less. The wrist and fingers are also stiff, and when the oedema affects the shoulder vertical movements of the scapula upon the chest are prevented. Lastly, the arm may be deeply cyanosed.

PATHOLOGY OF THE DROPSICAL ARM OF BREAST CANCER.

Among the general factors which may contribute towards the appearance of dropsy in cancer is the watery state of the blood plasma demonstrated by Dr. J. J. Douglas, which acts in two ways—by diminishing transudation and by hindering absorption through the capillary walls. It is also highly probable, though not proven, that toxins which injure the vascular endothelium and thus promote transudation are circulating in the blood.

But the strict localization of the area of oedema in brawny arm shows that local, not general, factors are the chief agents at work. It is a common clinical observation that the dropsical arm of breast cancer is accompanied by cyanosis and venous congestion of the limb. Hence, the swelling was formerly considered to be caused by venous obstruction, and to result from the pressure of growth upon the axillary veins. Various considerations show the incorrectness of this belief. Thus, Mr. T. W. NUDD showed that the axillary vessels might be completely enveloped in a cancerous mass, and yet the arm might not be swollen. Excision of a length of the axillary veins has not infrequently proved necessary during the removal of a breast cancer, yet in such cases oedema of the arm is rare. In animals obliteration of the main veins of a limb does not produce oedema. The fact appears to be that the venous obstruction in cases of dropsical arm is not the cause of, but is caused by, the dropsy. It has been shown by Professor Starling that if fluid is injected into the subcutaneous tissues of an animal's leg, obstruction or occlusion of the veins may be produced. The rise of

pressure thus produced in the capillaries tends in its turn to increase the transudation of lymph and to aggravate the dropsy, and thus a vicious circle is set up. The return of the cyanosed limb to its normal colour within a few days of the operation of lymphangioplasty, which I have observed on more than one occasion, is an experimental proof of the truth of the explanation in the cases where this phenomenon is observed. In other cases no doubt the pressure of growth on veins is a minor factor in aggravating the oedema.

If venous obstruction is a consequence of "dropsical arm," or at most a minor factor in aggravating it, some other explanation of the dropsy must be sought. Mr. T. W. Nunn believed that the oedema was due to obstruction of the axillary lymphatic trunks by growth within them. But although an obstruction of this kind must be present in an early stage of most cases of breast cancer, soon after the axillary glands have been attacked by growth, and while the case would still be regarded as operable, at this stage of the disease dropsical arm is never seen. Moreover, the modern operation for breast cancer ruthlessly and habitually divides all the lymphatic trunks during the removal of the axillary glands. Yet after this operation the lymph is easily able to return by collateral routes, and no swelling of the arm occurs. The collateral circulation has presumably been already developed to circumvent cancerous obstruction of the glands.

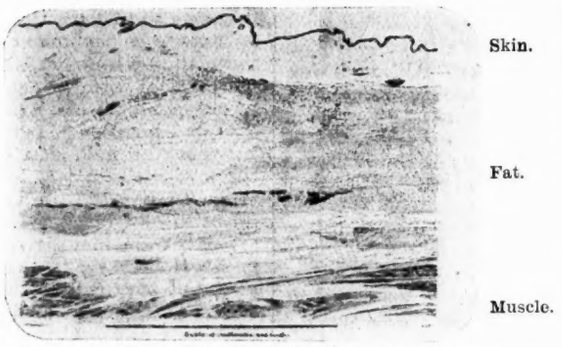

Fig. 1.—The microscopic growing edge of a breast cancer which had reached the deltoid region of the arm Above is seen the skin, below the superficial layer of the muscle. In the plane of the deep fascia permeated lymphatics are seen as dark lines. In the figure the cancer is spreading from left to right. To the right of the asterisk the tissues are free from cancer cells.

In point of fact, the onset of a dropsical arm is determined by the blocking, not merely of the main lymphatic trunks, but also of all the collateral routes about the shoulder by which the lymph could find a passage. The pathology of brawny arm is a corollary to the permeation theory. As I have shown, permeation spreads from the breast in an ever-widening circle, which must ultimately envelop the shoulder completely. I have demonstrated the growing edge of permeation in the deltoid region (Figs. 1 and 2). Perilymphatic fibrosis converts all the permeated lymphatics, small and large, into cords of fibrous tissue, and the arm is entirely cut off from the lymphatic circulation by the destruction of the lymphatic channels, principal and collateral. Thus, as might be expected, the dropsical arm of breast cancer is not met with until the disease has reached a very advanced stage. Often within a few months of its appearance obstruction to the pleural lymphatics shows itself by the appearance of pleural effusion. What is the factor which determines the collection of serous fluid on the pleura of the affected side? It is the choking up of the subpleural lymphatic plexus by permeation, or its obliteration by consequent perilymphatic fibrosis. Of the former process I am able to show you an excellent photograph. Some time after the arm has been cut off from the lymph circulation the process of permeation, at the opposite side of its circle of extension, reaches the pleura, and, though repeated tapping may give temporary relief, death is certain within a few months at most.

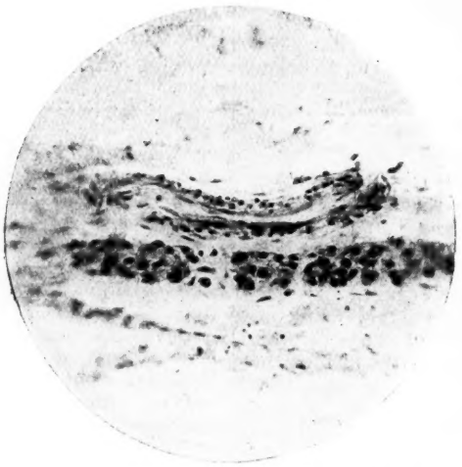

Fig. 2.—A high-power photograph by Mr. R. W. Annison of one of the permeated lymphatics indicated in Fig. 1.

That heart failure alone is not the determining factor in the production of hydrothorax is shown by the fact that out of 28 cases in which pleural fluid was found after death, in 20 the fluid was present only on the same side as the dropsical arm, the other pleura being empty. In 5 cases the fluid was present on both sides; in four of these cases the greater amount of fluid was present on the side of the swollen arm. In 3 cases fluid was present only on the side opposite to the swollen arm. These figures clearly show that the hydropleura, like the dropsical arm, is a local, not a constitutional, condition. Internal lymphatic obstruction, as indicated by pleural effusion, is present at death in 50 per cent. of cases of dropsical arm. In 34 per cent. of cases no pleural fluid is recorded as present, and in 16 per cent. it is definitely stated to be absent. But among the 9 cases which come under the latter heading 4 showed obliteration of the pleural cavity, or marked pleural adhesions, on one or both sides, so that hydropleura was an impossibility. Thus in a majority of chronic cancers which produce brawny arm death is due to internal lymphatic obstruction—a lethal factor the importance of which seems hitherto to have escaped recognition.

Are Bacteria Present in the Brawny Arm of Breast Cancer?

There are certain facts which suggest the possibility of bacterial infection of the tissues as a factor in the production of the swollen arm of breast cancer. M. Doyen in France, Mr. A. Leitch (Director of the Dundee Cancer Research Laboratory), and Messrs. Paine and Morgan in this country, have shown that micrococci are frequently present in cancerous tissues, and the former has given to the organism concerned the name of the *Micrococcus neoformans*. It is probable that this organism has no share in the production of cancer, and that its presence is due to a secondary invasion of the imperfectly vitalized malignant tissues. Such a secondary invasion might conceivably be a cause of obliterative lymphangitis, and of lymphatic oedema. But on two occasions Mr. A. G. R. Foulerton has examined lymph for me from cases of dropsical arm, and in both instances has found it sterile.

Origin of the Operation of Lymphangioplasty.

Until two years ago the only treatment available for cases of dropsical arm, after elevation had ceased to produce any effect, was either amputation of the arm or the use of morphine. The readiness of patients to listen to the suggestion of amputation is the best possible proof of the intolerable agony caused by the disease. Two years ago I was asked to amputate a dropsical arm, the patient's consent to the operation having been obtained. At this time my work in the Cancer Research Laboratories of the Middlesex Hospital had taught me that the condition would be cured if the swollen limb could be provided with a new set of lymphatic vessels. And I bethought me of a section in my possession showing a silk ligature which had been embedded in the tissues for ten years (Fig. 3). Though superficially eroded, the main substance of the thread is intact. Moreover, the interspaces between the silk fibrils are so small that no intrusive

cells have been able to enter and obstruct them. The section, moreover, affords no evidence of any clotting of the tissue fluids in the interspaces of the thread. These facts pointed to a silk thread as affording for the tissue fluid a permanent conduit, sufficiently unabsorbable, and not liable to obstruction by organization or thrombosis. I accordingly buried a number of silk threads in the subcutaneous tissues of the arm, and permanently relieved the pain and swelling during the remainder of the patient's life. I mention these facts to show that the operation of lymphangioplasty was not a casual happy thought, but the end-product of a long course of laboratory work, which seemed at the time to have no practical application to the treatment of lymphatic obstruction.

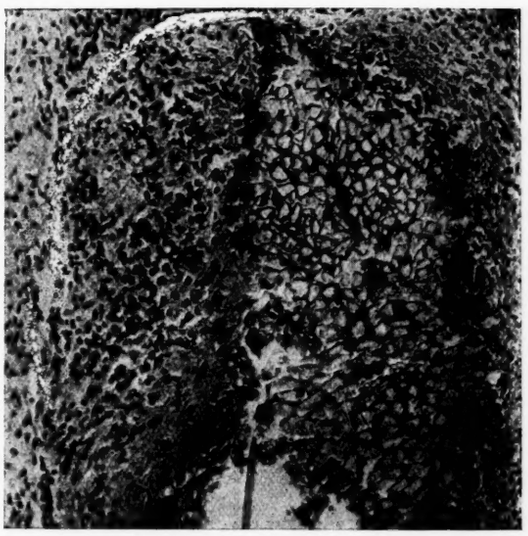

Fig. 3.—Photomicrograph of cross section of a silk ligature which had been embedded in the tissues for ten years. The main substance of the thread remains intact, and there is no sign of organization in its interior.

BENEFITS TO BE EXPECTED FROM LYMPHANGIOPLASTY.

Before describing the operation I wish to state clearly that it is a palliative only, and that it has no claims to prolong life or to modify the natural downward course of the disease. In favourable cases it has the following effects:

(*a*) Complete relief from pain within twenty-four hours, unless the pain is partially due to some cause—such as nerve pressure—independent of the oedema.

(*b*) A marked and rapid fall in the tissue tension of the whole area drained by the threads. The arm in consequence, instead of being hard and brawny, becomes abnormally soft and flabby. This may sometimes occur even though postural treatment is neglected, and in the absence of any marked diminution of the diameters of the arm.

(*c*) Rapid subsidence of the swelling, commencing immediately in the hand, and extending to the forearm within twenty-four hours. At first the upper arm is unaffected, or its diameters may even slightly increase. But within a week or two the diameters of the upper arm are also markedly lessened. The subsidence is usually permanent, unless and until pleural effusion supervenes to interfere with drainage. These effects are at first dependent upon the adoption of proper postural after-treatment, but after a few months elevation of the arm may be entirely abandoned without any marked increase of swelling.

(*d*) Return of power to the paralysed arm if the paralysis is of recent date. If the paralysis is of more than a few months' standing, no return of power is to be expected.

(*e*) An improvement in the general condition, dependent partly upon relief from pain and its associated symptoms of insomnia and depression, and partly upon the abandonment of sedatives.

Fig. 4.—Lymphangioplasty forceps, with jaws of soft metal specially designed to grasp either end of the probe firmly and to avoid scratching its surface.

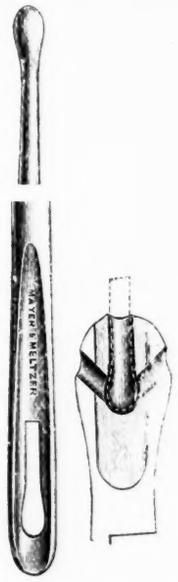

Fig. 5 shows the detail of the jaws of lymphangioplasty forceps, which are hollowed out in such a way that either end of the probe fits firmly in them.

TECHNIQUE OF LYMPHANGIOPLASTY FOR BRAWNY ARM.

The special materials necessary are a set of suitable probes, lymphangioplasty forceps (Figs. 4 and 5), with jaws specially designed to take a firm grip of either end of the probe; and a supply of No. 12 tubular woven silk. These requisites may be obtained from Messrs. Mayer and Meltzer.

The tissues of the arm are drained by two long U-shaped lines of silk, each line composed of two threads of No. 12 tubular silk (Fig. 6). One of these lines drains the front of the arm, the other the back. The bend of each U lies immediately above the wrist, and its two limbs occupy respectively the radial and ulnar side of the limb. Thus, along the whole length of the limb, are found four double lines of silk, spaced out round the limb as nearly as possible at quadrant intervals. Towards the shoulder the lines of silk on the flexor aspect curve outwards around the deltoid muscle, and converge to meet the ascending threads from the posterior aspect at a point near the posterior border of the deltoid. From this point the silk threads again radiate in the subcutaneous tissue of the back, terminating by free ends in the subcutaneous tissues of the scapular region. It is, perhaps, still better to lead some of them to the scapular region of the opposite side, and others to the lumbar region of the same side, if there is any sign of the oedema extending from the arm to the trunk.

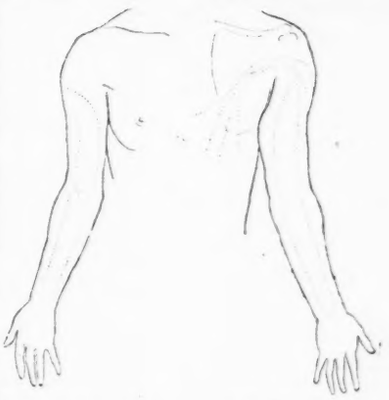

Fig. 6 shows the course of the threads in lymphangioplasty for brawny arm.

The operation is done as follows:

Take a double line of silk, rather more than twice as long as the arm, and mark its mid-point by clipping on it a pair of artery forceps. Wrap up one half its length in gauze. Thread the two free ends of the other half through the eye of a long probe. Make an incision ½ in. long through the skin at the middle of the front of the forearm, just above the wrist-joint. Thrust the probe in the desired line upwards in the subcutaneous tissues well away from the skin towards the region of the elbow, as high as is convenient, and cut down upon its point. Withdraw the probe through the incision last made, and draw the silk after it as far as it will come. Introduce the probe through the incision from which it has just emerged,

thrust it upwards again in the selected line, and repeat the foregoing steps until the point selected for the convergence of the threads is reached. Here an incision 1 in. long is made, through which the probe with its two silk threads is drawn out. The other half of the silk loop is now led upwards in the selected line along the other border of the flexor surface. The limb is turned over and the extensor loop of silk is similarly introduced. When this has been done eight free ends of silk are hanging out from the incision of convergence at the posterior border of the deltoid. Two at a time these are tucked away in various directions in the subcutaneous tissues of the back by the following manœuvre.

Clip a forceps on the selected pair of silk threads just where it emerges from the topmost incision. Take a long probe, cut off the ends of the two threads so that they are 4 in. shorter than the probe, and thread them into the eye. Thrust the probe downwards from the incision in the desired direction until the probe unthreads itself. Withdraw the probe carefully, leaving the two silk threads to occupy its track. When all the threads have thus been tucked away, the operation is completed by sewing up the incisions with horsehair.

The principal difficulties of the operation are connected with the maintenance of the silk in an aseptic condition. Owing to the large area dealt with, extending on to the back, the necessary changes in the posture of the arm, and the length of the silk threads, accidental contact may very easily occur between the silk and the surface of the skin, the edges of the incisions or surrounding objects. I regard the use of masks as essential, and the silk ends not actually dealt with at the moment must be kept wrapped in sterile gauze, which is also useful to protect them from the edges of the incisions as they are being drawn in after the probe. This method contains modifications which my experience has shown to be desirable. My object has been to simplify the operation, to reduce the number of incisions necessary, and as a reasonable precaution to insert the threads in such a manner that they can, if necessary, be withdrawn with a minimum of trouble. All the threads can be withdrawn by reopening the two incisions just above the wrist. Fortunately I have never been obliged to do this. There is no need to fix the upper ends of the threads by knotting them together, as I formerly thought, for the silk soon becomes adherent along its whole length to the tissues in contact with it.

I will now lay before you my clinical experience of the operation in a series of fifteen cases, analysed into five classes.

A. *Cases in which a Dropsical Arm is the Only Manifestation of Active Disease.*

Three of the cases in my series may be regarded as ideal ones for the operation of lymphangioplasty. Each of these had a long history of cancer, the disease having begun respectively fourteen, fourteen, and seven years previously. Evidently, the defensive processes of fibrosis were exceptionally active. In each of these cases no clinically discoverable mass of cancer existed at the time of the operation, and no ulceration was present as a menace to operative asepsis. Under these conditions the operation appears to be uniformly successful. In all these cases pain and swelling were relieved within a day or two of the operation. One of them (Figs. 7–9) remained free from pain and swelling to the day of her death (Case I),* a second survives twenty-one months after the operation without recurrence of the swelling (Case V), but still suffers occasional attacks of pain, due to a palpable axillary recurrence which has now appeared. In the third case (Case VIII), after complete relief lasting about four months, pleural effusion showed itself and pain and swelling in some degree recurred in the arm, owing to consequent impaired lymph circulation in the thorax. The pain, however, was slight, and though morphine had been habitually used prior to the operation, it remained unnecessary until the patient's death from pleural effusion and thoracic growth.

Fig. 7.—Case I before operation.

Fig. 8.—Case I shortly after operation.

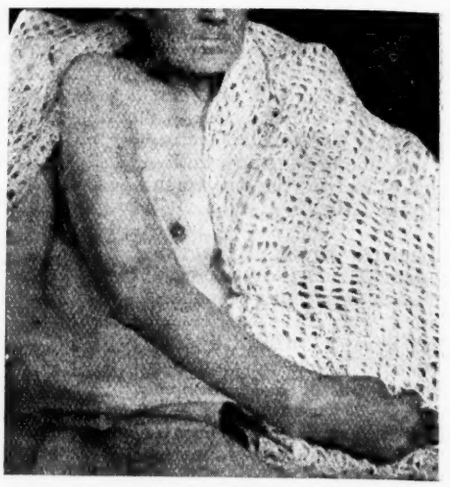

Fig. 9.—Another view of Case I after operation. Note the lax fold of tissue behind the upper arm.

Fig. 10.—Case II before operation.

Fig. 11.—Case II after operation. Note the considerable flexion of the elbow which is now possible, and the laxity of the skin.

B. *Cases in which Recurrent Masses of Growth are Present, but Ulceration and Pleural Effusion are Absent.*

Six of my cases come under this heading, and may thus be summarized:

CASE II.—Inoperable recurrences in the axilla, near the scar, and in the right eye. Complete relief of swelling, and considerable relief of pain, persisting till death from internal deposits. (Figs. 10 and 11.)

* The notes of the cases will be found in the Appendix.

CASE IV.—Enlargement of the left supraclavicular glands. Some relief at first, but a rapid relapse, associated with excessive use of the arm and neglect of after-treatment.

CASE VI.—Enlarged glands in the axilla, and thickening adjacent to operation scar. Great relief. Death three months later from advance of the disease. (Fig. 12.)

CASE IX.—Enlarged glands in both supraclavicular regions. Pain chiefly located in the axilla. No relief. Nodular recurrence in the scapular region along the lines of silk.

CASE X.—Recurrence present in the subclavian glands. Pain of a stabbing or shooting character. No relief.

CASE XII.—Enlargement of right supraclavicular glands and suspicious induration along the coraco-brachialis. A small nodule near the scar. Partial relief, slowly increasing to almost complete relief.

In all of these cases recurrent masses of growth were present in the neighbourhood of the brachial plexus. Three of these were successful; in one the period of benefit was very short, and two were failures.

In this class of case the difficulty is to decide how much of the pain is due to nerve pressure and how much to the dropsical arm. Evidently, in view of the successful cases, the mere presence of growth in the axilla or supraclavicular region is not a bar to operation, but the relief obtained may not be complete, and in half the cases no benefit results. My experience teaches that if the pain is referred mainly to the axilla or supraclavicular region, or if it is a lancinating pain shooting down the arm, little or no benefit is to be expected from lymphangioplasty.

If, on the contrary, the pain is a heavy diffuse pain referred to the whole limb, or if it is located in the elbow or the hand, the operation will afford relief, even though there is recurrence above or below the clavicle.

Fig. 12.—The arm in Case VI before and shortly after the operation.

C. *Cases in which Axillary or Thoracic Ulceration is Present, and Pleural Effusion is Absent.*

This is a class of case which I approached with caution and with some reluctance, for I feared that in the presence of a cancerous ulcer upon the thorax or in the axilla, it would be very difficult to prevent contamination of the silk threads.

The first case (Case VII) upon which I operated in the presence of ulcerated growth was submitted for a month previously to ionic medication with mercury in order to cleanse the ulcers. In subsequent cases, antiseptic irrigations, and lately applications of acetone, have been employed.

Thanks to the loyal co-operation of medical and nursing colleagues in these and other precautionary measures, the calamity of suppuration has never occurred. In every case all the incisions have healed by primary union, nor has it been ever necessary in any of the cases under this heading to remove the threads. Repeated success in these cases has increased my boldness in dealing with them. In my latest case (Case XV) the axilla was a gaping chasm pouring out pus, and the ulceration had completely surrounded the arm save for a bridge of normal tissue posteriorly, about 6 in. wide, which afforded the only possible avenue for the threads. In this case primary union of the incisions occurred, and the patient is delighted with the relief of pain and swelling, and the return of muscular power which have resulted from the operation. Dr. A. O. English acted as house-surgeon, and the case may be seen in Stafford Ward, one of the cancer wards of the Middlesex Hospital.

The cases in this class may be briefly summarized:

CASE VII.—Extensive ulceration of the chest and axilla with scattered nodules of growth. Normal convalescence and primary union after lymphangioplasty, with relief from pain and subsidence of swelling. Three weeks after operation intercurrent acute eczema attacked the arm, and pain and swelling recurred.

CASE XI.—Eczematous and crusted area on the left side of the chest, with axillary ulceration; excruciating pain, chiefly referred to the palm of the hand; lymphangioplasty; primary union. Complete relief from this pain and from brawny swelling of the arm until her death from pleuritic effusion and thoracic metastases. The swelling of the upper arm recurred when the chest filled up but did not again become hard and brawny.

CASE XV.—Brawny arm, acute pain, and paralysis of arm. Deep axillary ulceration wrapping round the arm, but leaving a bridge 6 in. wide posteriorly. Profuse suppuration from the ulcer. Acetone treatment. Lymphangioplasty. Primary union. Most marked relief of pain and swelling, and return of muscular power, so that the patient was able to write me a letter of thanks with the hand which had been completely paralysed.

The onset of acute eczema of the arm three weeks after operation in Case VII is a complication unique in my experience, and may fairly be regarded as an unfortunate accident which spoiled a case giving every promise of success. I may remind you that when physiologists wish to increase the production of lymph in a limb, the method they adopt is to scald the skin of the anaesthetized animal. It is easy to believe that acute eczema would have a similar effect. The other two cases in this class were unequivocal successes. It may, I think, be concluded that the presence of ulceration does not appreciably increase the risk of lymphangioplasty, provided means are taken to clean the ulcers and to shut them off effectually from the field of operation. With my present experience I should not hesitate to operate upon cases such as the following.

In October, 1908, I saw at Selkirk, with her medical attendant Dr. J. S. Muir, a lady with the following history:

The right breast had been removed for cancer seven years previously by Professor Caird. A year later the same surgeon excised some cancerous nodules near the cicatrix. Others made their appearance, and were treated with *x* rays by Dr. Dawson Turner with decided benefit. But an intractable ulcer remained, which was two years in healing. Meantime the disease recurred in the surrounding region, involving a large area of skin on the side of the thorax, from the axilla to the ninth rib. The upper arm is now very stiff, there being almost no movement at the shoulder. The arm is swollen from the apex of the deltoid down to the wrist. The extensor muscles of the hand and fingers are atrophied, the latter being flexed. The patient suffers constant and severe burning pain in the arm, and complains far more of this than of the malignant ulceration. Her internal organs appear sound, and her general health good, in spite of sleepless nights and the occasional use of opiates—a condition of things partly due to an open-air country life.

In this case, though the patient was perfectly prepared for operation, I told her that the large ulcerated area on the chest added considerably to the risk, and she decided to defer it. Elevation on a splint was subsequently tried without benefit.

With my present experience I should feel justified in stating in a similar case that the extra risk involved is very small, and should definitely advise operation.

D. *Cases in which Pleural Fluid or other Evidence of Thoracic Cancer is Present, but the Condition of the Patient does not Negative a General Anaesthetic.*

When pleural fluid is present the balance of life remaining to the patient is in any case likely to be a short one. Thus in one case the chest only filled up two days before

death, and 70 oz. of fluid were present in the pleura on the affected side. This is an extreme case. As a rule pleural effusion precedes death by two or three months, occasionally perhaps by a year. Apart from this question of survival, the success of the operation is doubtful, for hydrothorax shows that the lymphatic block extends over a wide area including the pleura. Under such conditions nothing can be promised, but if paracentesis is also done a few weeks' relief may be obtained, and therefore an urgent desire on the patient's part for a brief respite from pain may justify an operation. The necessity of morphine—a drug to which many people have a kind of conscientious objection—may thus be postponed for a while.

CASE XIII.—Recurrent mammary cancer with dropsical arm and very severe pain. Pleural effusion. Paracentesis followed by lymphangioplasty. Marked relief of pain and swelling. Recurrent hydrothorax for which several tappings were necessary, and death from advancing disease in the thorax within five weeks. Swelling did not recur in the arm, but oedema appeared in the axilla and extended across the chest to the left breast. The relief obtained during the short remainder of life was marked.

CASE XIV.—Recurrent ulcerated mammary cancer with dropsical arm. Impaired resonance at the base on the same side. The patient's sufferings were so great and her dislike of morphine so strong, that she urgently asked for operation, "even if the relief lasted only three days." Lymphangioplasty. Rapid subsidence of swelling and complete freedom from pain for ten days, when recurrence of pain and swelling coincided with the development of hydrothorax.

Fig. 13.

Fig. 14.

Figs. 13 and 14 are two views of a case unsuitable for treatment by lymphangioplasty (Case III). Note that the shoulder is involved in the swelling and that an area of cancerous induration with a definite edge extends from the arm to the scapular region posteriorly.

E. *Cases in which the Patient is so Ill that the Risk of a General Anaesthetic cannot be faced, or in which the Silk Threads must be led through Cancerous Tissue.*

Assuming the white sheet of penitence, I must now relate to you the remaining case of my operation series (Figs. 13 and 14), which embodied both of these absolute contraindications to the operation of lymphangioplasty. This case (Case III), one of my earliest, was in an almost moribund condition with thoracic cancer and pleural effusion, and was suffering tortures from a dropsical arm. A general anaesthetic seemed out of the question. Under a local anaesthetic an attempt was made to ease her last days by a rapid partial lymphangioplasty, using a single line of narrow silk ribbon instead of thread. But such pain was caused by the passage of the probe through the subcutaneous tissues above the skin incision that a general anaesthetic had to be given. At the shoulder the ribbon passed through an indurated area of diffuse subcutaneous cancer. No relief followed, and suppuration occurred along the line of the silk. She died about a week later. If the operation shortened her life, it was by a few days at most. I claim for this case the indulgence due to a pioneer mistake.

MORTALITY OF LYMPHANGIOPLASTY FOR BREAST CANCER.

The case which I have just described is the only one of my series in which primary union has failed, and the only one in which death has followed closely upon the operation. Including this unsuitable case, the operation mortality of my series is 7 per cent.; excluding it, the operation mortality is *nil*. I think an impartial critic will agree that the latter is the fairer estimate, and that my cases show the procedure to be almost free from risk to life when asepsis is maintained. The operation is indeed equivalent merely to a 5-inch skin incision, that being about the aggregate length of the multiple small incisions. Shock and haemorrhage need not be feared. The cradle-splint represented in Fig. 15 will be found very useful during convalescence. It was suggested to me by Dr. J. M. Brydone.

REMOVAL OF THE SILK USED IN LYMPHANGIOPLASTY.

The following are the cases in which I have had to remove silk inserted for lymphatic drainage.

1. L. D. Lymphangioplasty for brawny arm of breast cancer. Primary union. The patient was discharged with the incisions soundly healed. Several months later she was admitted with suppuration extending along one of the threads from the wrist to the elbow. The corresponding incisions had reopened. She had neglected after-treatment, and, as she lived alone, she had used the arm for rough and dirty housework.

The infected length of silk was cut through by subcutaneous tenotomy well above and well below the limit of infection, and was easily withdrawn through one of the reopened incisions. The tract was syringed out with zinc chloride, 10 grains to the ounce. The incisions closed within a few days afterwards.

2. A case of elephantiasis to be described in Lecture II.

THE CHOICE OF CASES FOR LYMPHANGIOPLASTY.

The preceding analysis of my cases shows that lymphangioplasty is contraindicated in cases where a general anaesthetic cannot be borne, and in cases where the silk threads would have to pass through cancerous tissue. It is also inadvisable to operate where there is growth present about the shoulder, if the pain is mainly an axillary one, or is a lancinating pain shooting down the arm. In the presence of pleural effusion or secondary growths the benefits of the operation are transient, but the shortest period of relief may, under the circumstances, be considered by the patient as worth having.

MINOR DEGREES OF SWELLING.

Minor degrees of obstruction to the return of lymph from the arm are not infrequently met with in breast cancer. The operation of lymphangioplasty should not be applied indiscriminately, but should be reserved for the severer degrees of lymph-stasis in which other modes of treatment are powerless.

The axillary scarring which necessarily follows removal of glands may sometimes lead to persistent oedema of the arm, usually slight in amount. In such cases the application of a bandage and the elevation of the arm on an inclined plane for one or two hours a day will usually suffice. In other cases, which ultimately develop into the true brawny arm, the lymph obstruction is partial only. In such cases, although the arm may attain a very considerable size, the oedema is soft, and pits freely on pressure. Postural treatment by elevation will sometimes in this stage reduce the size of the arm considerably, and will, to some extent, relieve the pain. The necessity of operation is thus for a time deferred, but the relief obtained is not to be compared with that resulting from lymphangioplasty. It appears, moreover, to be very transient, and in many cases even before the oedema has

become solid, postural treatment is intolerable because it severely aggravates the pain. This fact is easily explicable, since the lymph from the forearm, flowing easily upwards into the arm and meeting obstruction there, distends the tissues of the upper arm to an unbearable

Fig. 15.—Cradle-splint for use after lymphangioplasty.

extent. In the following case the effects of postural treatment are seen at their maximum.

CASE E. E.—A woman, aged about 60, was admitted into the cancer wards of the Middlesex Hospital at the beginning of August, 1908. She suffered from recurrent breast cancer of the left side in a chronic form. The left arm was much swollen, but it pitted freely on pressure. She was ordered to have the arm elevated on an inclined plane at an angle of about 25 degrees with the horizontal for two hours daily, but, owing to the painful tension produced in the scar tissue of the axilla, she could not bear the elevation for more than one hour daily. The swelling of the forearm at first subsided rapidly, while the upper arm later showed slight improvement. Within a month, however, most of the improvement had been lost. She declined operation. The following are the measurements of the arm:

	Aug. 7th.	Aug. 10th.	Aug. 14th.	Sept. 4th.
	in.	in.	in	in.
Round hand	8	6¾	6⅝	7¼
At wrist	6¾	6¼	6⅛	6⅞
4½ in. above wrist ...	10¾	8¼	9	10
At elbow	14¼	14¼	12¾	13½
3½ in. above elbow ...	13¼	13½	12⅞	13¼
4 in. above elbow ...	11	12½	9¼	14

Thus, even in favourable cases, where the affection has not reached the stage of brawny hardness, the effects of posture are temporary and imperfect. If the oedema is marked and progressive, and if postural treatment is painful or ceases to be effective, the stage of brawny hardness should be anticipated and prevented by the performance of lymphangioplasty. The only objection to this course is that the patient will underestimate the benefits she has derived from the operation, for prophylaxis is less striking than cure, and earns less gratitude.

The following case is an instance of the mild post-operative oedema for which lymphangioplasty is unnecessary:

B. F. S., aged 35, was operated upon by me for breast cancer three years ago. She remains (January, 1910) free from any sign of recurrence, but three months after the operation some oedema of the right arm and hand, extending upwards nearly to the elbow, began to show itself, and has since persisted. The upper arm remains comparatively free from swelling. The oedema pits on pressure. Elevation rapidly reduced it as shown in the following table, and no operation was advised. In future the patient is to sleep with the forearm elevated on a splint whose upper end is slung to the head of the bed, an arrangement which in no way disturbs her rest. During the day she is to use the arm as usual.

	Jan. 12th.	Jan. 24th.
	in.	in.
Round the hand	9	8
At wrist	8¼	7¼
Below elbow	10	9½
Above elbow	10½	9

In this case there is evidently no true blockage of the lymph stream, but only a slight insufficiency in the total calibre of the lymph channels, owing to the interference produced by the operation. In such cases lymphangioplasty is usually unnecessary.

ERYSIPELAS AS A CAUSE OF LYMPHATIC OEDEMA.

Lymphatic oedema sometimes, though rarely, supervenes on erysipelas in situations where the subcutaneous tissues are loose and easily distended by serous fluid. Its most common situation is the eyelids, though it may affect more or less the whole of the face. In such cases it is easy to imagine, though impossible to prove, that the lymphatic vessels of the part have been obliterated by an unusually severe lymphangitis which has swept through them like a prairie fire, leaving only fibrous cords to represent the vessels.

No satisfactory treatment has hitherto existed for lymphatic oedema of the eyelids following erysipelas, and I was very anxious for an opportunity to try the effect of lymphangioplasty in such a case. The method I had intended to try was as follows:

Make a small horizontal incision ¼ inch long just outside the outer canthus. Take a suitably curved, fine, sharp-ended probe loaded with No. 8 tubular silk, and pass it from the incision through the thickened subcutaneous tissue of the eyelid parallel to and just below its free edge to the inner canthus. Here the skin is pierced from within by the point of the probe. The probe is completely pulled through, and the end of the silk follows it out through the puncture. The other end of the silk is now threaded through the probe, and its sharp end is pushed from the incision downward through the subcutaneous tissues of the cheek over the parotid gland for about 1½ in. The point of the probe is here made to emerge through the skin, and the probe, carrying with it the end of the silk, is withdrawn and unthreaded. In a similar fashion another thread is placed in position in the lower eyelid lying below the first but emerging at the same points on the skin. The upper eyelid is now dealt with in exactly the same way, its threads entering at the same incision, and emerging at punctures closely adjoining those from which the threads of the lower lid emerge. The ends of the threads are now all shaved off close to the skin, through the thickness of which they are caused to retract by a gentle pull applied to each thread where it lies in the floor of the incision. The incision is now sewn up with a point or two of horsehair, leaving the threads in position as four parallel lines, two in each eyelid, with their outer ends prolonged downwards into the subcutaneous tissue of the cheek.

In the absence of a suitable case I have been unable to try this method of operation. Priority in the application of lymphangioplasty to this class of case belongs to Mr. A. B. Mitchell of Belfast, who in two successful cases used a method differing only in technical detail from the one I intended to employ.

CASE I.—(Mitchell). A man, aged 25, had facial erysipelas in June, 1907. Solid oedema of the eyelids resulted, upon which treatment, including injections of fibrolysin, had no effect. Four threads were introduced in June, 1909, one in each eyelid on both sides of the face. Great improvement resulted within three weeks. One thread caused slight irritation, and had subsequently to be removed. The others still remain in position.

CASE II.—(Mitchell).* A young soldier in 1907 suffered from erysipelas of the left side of the face following an operation upon the cervical glands. Solid oedema of the face and lips supervened, and persisted until May, 1909, when Mr. Mitchell introduced two silk threads leading from the subcutaneous tissues over the masseter muscle downwards to the loose tissue

*A. B. Mitchell. A Case of Lymphangioplasty for Solid Oedema. BRITISH MEDICAL JOURNAL, November 20th, 1909.

behind the clavicle. The result was entirely satisfactory. The threads never gave the slightest trouble, and the face assumed its natural contour.

I am much indebted to Mr. A. B. Mitchell for supplying this conclusive evidence of the value of lymphangioplasty in post-erysipelatous oedema. These cases supply an additional proof, if one were needed, that the effects of lymphangioplasty in the limbs are not primarily due to the elevation which forms a necessary part of the after-treatment. The eyelids tend to drain by gravity either into the face or the scalp whether the patient be standing or lying. Yet until the operation, in each of Mr. Mitchell's cases the oedema had persisted unchanged for about two years.

Appendix of Cases.

Case I.

The patient, a woman aged 56, was admitted into the cancer wards of the Middlesex Hospital on January 18th, 1908, under my senior colleague Mr. J. Bland-Sutton, who kindly transferred her to me for treatment. In 1894 a portion of the right breast was removed for carcinoma at the Chichester Hospital. In 1896 recurrences in the breast and axilla were removed at St. Mary's Hospital. In 1903 two or three small recurrent growths were removed from the axilla. In 1905 the right arm became swollen; it slowly became paralysed, and has been the seat during the past three years of excruciating pain, which frequently kept her awake at night. On admission, there was no evidence of cancer in the body in the form of palpable tumours. The right nipple still remained intact, and was not indrawn, and there was no lump in what remained of the right breast, nor was there any axillary mass of growth. The chest and abdomen were free from deposits. The growth was evidently an atrophic scirrhus, which had undergone an almost complete process of natural cure. The right hand and arm below the deltoid insertion was greatly swollen. The oedema pitted slightly on pressure, though it approached the solid variety. There was complete paralysis of the limb, save that the third and fourth fingers moved slightly. Sensation was lost in the thumb and first finger, but not in the second, third, and fourth. The hand was warm and of natural colour. Flexion of the elbow was only possible through 15 degrees, or rather less.

On February 1st, 1908, lymphangioplasty was performed. The operation produced no general disturbance of note. On the next day it was obvious that the bandages were loose, and the strapping upon her fingers was in the same condition and had to be frequently replaced. On February 6th it was noted that the arm and hand were quite flabby and much reduced in size. The skin was much wrinkled, and hung awkwardly on the fingers in folds. On February 7th the patient remarked that she "saw her knuckles for the first time for years." The movements of the fingers were beginning to return, and she was able to grasp very feebly. The arm was still quite paralysed. On February 10th the forearm and hand began to present an almost normal appearance, but much swelling of the upper arm remained. On February 19th the swelling about the elbow, which as the patient lay was the lowest point of the limb, had somewhat increased, and the limb was ordered to be put up on an inclined plane in an extended position and to be bandaged during the night. On February 24th the limb was continuing to diminish in size, though less rapidly than at first. Unfortunately measurements of the limb previously to operation were omitted, so that no accurate record remains of its very rapid and marked subsidence in the earliest days after the operation (Figs. 7, 8, and 9). Its slower subsequent subsidence is recorded in the following table.

Circumference of Arm.

	Feb. 6th.	Feb. 13th.	Feb. 18th.	Feb. 19th.	Feb. 21st.	Feb. 24th.	April 6th.
	in.	in.	in.	in.	in.	in.	in.
At wrist	7¼	6⅝	6⅝	6¼	6¼	6⅜	6
4½ in. above wrist	8½	8⅛	8¼	8	7⅞	7⅞	6¾
Just below elbow	10½	9½	10¼*	10⅛	9⅜	9⅜	9⅜
8 in. above acromion ...	11	8⅞	10½*	10⅜	9½	9⅜	9¾

* Temporary return of swelling owing to dependent position of elbow.

Note.—The operation was performed on February 1st.

On April 8th it is noted that the patient has lost her pain, and that she is very grateful for the operation. Flexion of the elbow is now possible through about 110 degrees, as compared with about 15 degrees or less before the operation. The movements of the hand continued to improve so that the patient could hold a pin between the finger and thumb, but no return of power took place in the muscles of the arm. She developed signs of a deposit of cancer in the left great trochanter, and died on June 10th without recurrence of the swelling in the arm.

Abstract of Necropsy.

Upon the right arm and in the right pectoral region some fine longitudinal scars were seen. Two incisions were made in the limb, and thence 3 in. or 4 in. of silk were extracted. The silk had undergone hardly any change, and maintained its continuity along the limb. It had become firmly attached to the subcutaneous tissue which lay in contact with it. The right breast had been only partially removed. A mass of new growth, about 2 in. by 1 in., was present beneath the breast tissues, mainly between the ribs and parietal pleura, and besides this larger mass a number of small nodules could be seen beneath the parietal pleura. The fourth rib was invaded near its vertebral attachment.

The right pleural sac was filled with 16 oz. of blood-stained fluid. The right lung was adherent at its apex to the parietal pleura and the region of the new growth. A few small nodules the size of a pea were present. These were in the main confined to the upper lobe. A bronchial gland was enlarged to the size of a walnut, and had been infected. The liver exhibited one small subserous deposit on the right lobe anteriorly. The other organs were normal. The growth was a spheroidal-celled carcinoma.

Case II.

This patient, E. A., a woman aged about 50, first noticed a small lump in the left breast in 1897. In 1899 the breast was removed at the North-West London Hospital by Mr. Frederick Durham. Operations for recurrence, four in number, have been performed at intervals since. The first of these took place in 1902, the second in 1904, the last in 1906. She was admitted to the cancer wards of the Middlesex Hospital on January 3rd, 1908, for inoperable recurrence in the left axilla and near the scar and for swelling of the arm, and was kindly transferred to me for treatment by my senior colleague, Mr. John Murray. On admission the left arm, and more especially the forearm, hands, and fingers are much swollen, and the limb is completely paralysed. The hand is purple in colour, but the fingers are warm. On account of the swelling of the tissues, the radial pulse cannot be felt. The oedema pits slightly on pressure, although in places it is almost solid. The pain in the arm is occasionally most severe, and in consequence of it the patient suffers much from insomnia. Amputation had been suggested before the patient's admission, and her condition was so miserable that she was prepared to welcome the loss of the limb.

Owing to the axillary recurrence and the consequent absence of loose skin on the thoracic wall in front, it was deemed well in this case to carry the threads up on the posterior aspect of the axilla, and this has since been my routine practice. They terminated in the subcutaneous tissue over the scapula. Four pairs of threads were used, as in the previous case—two on the flexor and two on the extensor aspect of the arm.

Measurement of Arms.

	Right Arm (normal.)	Left Arm.				
		Before Operation.	March 3rd.	March 13th.	March 18th.	April 6th.
	in.	in.	in.	in.	in.	in.
4½ in. above wrist ...	7¼	9¼	7¾	6⅝	6⅝	7
Just below elbow ...	8¾	11¼	9⅜	8⅞	9⅜	9
1½ in. above elbow ...	8¾	12½	10	9⅝	10¼	10
8 in. below acromion...	9	12	10⅛	10⅜	9⅝	9⅜
Just below fold of axilla	10	10¾	11½	11¼	11	10⅜

The swelling in this case, as in Case I, subsided from below upwards, the subsidence being first noticed in the hand and forearm (Figs. 10 and 11). The excruciating pain has been entirely relieved, and the patient has good nights. She appears to be putting on flesh, and her worn expression has been replaced by a more contented look. She has still a certain amount of axillary pain, due to the recurrent growth in the axilla.

After about two months postural treatment was abandoned, without return of the swelling in the arm and hand. Subsequently she had considerable pain from secondary deposits in the right eye, and in the autumn her condition rapidly changed for the worse, although no swelling returned in the arm. In November there was slight increase in the diameters of the hand and arm, but with no return of the brawny hardness, and she died of secondary deposits on December 5th.

At the necropsy a secondary deposit was found at the back of the orbit, extending into the cranial cavity. The sternum was partly replaced by new growth. The left humerus was fractured at about the juncture of the middle and lower thirds. No other secondary deposits were found, and there was no fluid in the pleural cavity.

Case III.

This case has already been described in the lecture (Figs. 13 and 14).

Case IV.

Miss D., aged 68, had her left breast removed for carcinoma at the London Hospital in 1901 or 1902. The growth had been present for three years. Two years after the operation a secondary nodule was excised from the scar. In 1907 another secondary nodule was excised. About April, 1906, she

noticed that her left hand was beginning to swell, and the swelling has gradually extended up the arm. It has caused great pain, and in consequence of it she has had very sleepless nights. She has, however, been able to use her arm until quite lately. Tingling in the fingers has been a marked symptom.

On examination the scar of the operation is sound. No secondary nodules are present, nor could any glands be felt in the axilla, though there appears to be enlargement of the left supraclavicular glands. The left arm is swollen from the middle phalangeal joint to just below the tip of the acromion process, where there is a well-marked line of demarcation. The patient has free movement of her arm, and is able to move her fingers.

On April 18th, 1908, lymphangioplasty was done in the usual manner, except that an additional length of silk was introduced leading from the front of the biceps to the axilla, the better to drain this region.

On April 20th an obvious decrease in the size of the arm was noted, and the improvement was continuous. The wounds healed, and dressings were left off on April 30th. She left the hospital on May 5th, somewhat relieved.

Measurements of Arms.

	Left Arm.				Right Arm (normal).
	April 16th.	April 23rd.	April 27th.	May 4th.	
	in.	in.	in.	in.	in.
Palm	10	8½	8½	8¾	7½
4½ in above wrist ...	12	9¾	9¾	9	8
Elbow	13	10½	10½	10¼	9
Over biceps	14	12	12	13	10
Below acromion ...	13½	14½	13	13½	12½

The subsequent history of the case is unsatisfactory. The old lady, who lived alone and attended to her own wants, began to use the arm very freely, contrary to the instructions given her. She was readmitted to the hospital on July 1st, 1908. The swelling had to a large extent recurred, a result which is to be expected if the after-treatment is neglected. Moreover, just above the elbow one of the incisions was surrounded by an area of redness, and had reopened, exuding a little pus, and exposing two of the buried silk threads. The skin round several other incisions was in a red and irritable condition. The infection was limited to a single pair of the threads. On July 4th this pair of threads was divided subcutaneously by a tenotome well above the elbow in a region to which the infection had not extended. The lowest incison, at the wrist, was reopened, and the infected length of silk was easily withdrawn. The track in which it had lain was syringed out with zinc chloride lotion, and the incisions were left to granulate. Nine days after operation the patient left the hospital with the incisions healed.

The infection of the silk did not occur at the first operation, for the temperature, though it ran up to 101° in the first twenty-four hours, fell to normal on the fourth day, and was never subsequently above 99°. Chronic irritation of the recently healed incisions by washing and housework appears to have been the infective agent.

I again heard of this patient in July, 1909. At this time the arm was described as enormously swollen, and quite dark in colour at the shoulder. A mass of growth, not giving rise to pain, was present in the opposite supraclavicular region.

The swollen arm was the seat of intense pain of unspecified nature. I did not have the opportunity of questioning or examining the patient.

CASE V.

Mrs. P., a lady of middle age, sent to me in 1908 by Dr. R. S. Armstrong, was operated upon for cancer of the left breast in November, 1894. A portion only of the breast was removed, and the axilla was not opened. An operation for recurrence was done in 1895. There has since been no recurrence. Nevertheless, in August, 1907, the left arm began to swell. The arm has been "very painful indeed," and has kept her awake at night. The swelling is only moderate in amount, but the oedema is almost solid. Movement of the arm is free except when restricted by pain. Lymphangioplasty was done in a nursing home on April 27th, 1908. Since the swelling was only moderate to begin with, the effect of the operation on the measurements of the arm has been almost inappreciable. Some diameters have slightly diminished, others have slightly increased. A most marked diminution of the tissue tension of the arm was, however, manifest in a few days, and this has continued up to the present time, when all the tissues except over the back of the elbow, where there is a comparatively firm area, are remarkably soft and flabby. Although the attacks of pain in the breast, shoulder, and arm have since occurred at intervals, the patient is satisfied that she has derived great benefit from the operation.

An interesting point of the case is that this patient, who had never previously suffered from asthma, developed this disease in a severe and typical form during her convalescence from lymphangioplasty. This fact favours the view of the pathology of asthma held by Dr. Harry Campbell and others that it depends on oedematous swelling of the bronchial mucous membrane. She found that the attacks were made worse by the elevation of the arm, and consequently she has almost neglected this part of the after-treatment.

Quite recently a palpable recurrence has shown itself at the apex of the axilla.

While in this case the operation has not given entire freedom from pain, because part of it is due to pressure of growth upon nerve trunks, it may, I think, be fairly claimed that it has arrested the evolution of what seemed to be an early stage of the typical "brawny arm." This arrest in the morbid process has extended to the present time, a period of twenty-one months, and during this time the pain, instead of increasing with the graduai development of the swelling, has been decidedly less than before. The tissues of the arm are soft and slack, and, in spite of the neglect of postural after-treatment, there has been no return of the very marked oedema of the hand which was formerly present. (This patient was shown after the lecture.)

Measurements of Arms.

	Right Arm.	Left Arm (not taken before Operation).					
		May 17th, 1908.	Jan. 8th, 1909.	Mar. 19th, 1909.	June 21st, 1909.	Sept. 22nd, 1909.	Dec. 31st, 1909.
	in.	in.	in.	in.	in.	in.	in.
At wrist	6⅝	7⅛	8	6⅝	6⅝	6¼	6⅝
4½ in. above wrist	8¼	10⅝	11	10¼	10⅛	10	10½
Just below elbow	9¾	12¼	11½	11⅛	11¼	10⅞	11⅜
Just above elbow	9⅜	12¾	—	12	12	11⅜	12⅜
5 in. below acromion ...	10½	11½	12¼	12⅜	12¼	12⅜	13¼

This is the only case which I have operated on in such an early stage. Although prevention is better than cure, and although the result in this case is satisfactory, it has to be remembered that cases of mild post-operative oedema of the arm do not always become progressively worse. Since in the present case the original breast operation had been a decidedly restricted one, it can hardly be alleged as the cause of the oedema, and I am confident that lymphangioplasty cut short the development of a typical brawny arm. But such cases will fail to convince a sceptic of the value of lymphangioplasty. They have the further disadvantage that their results cannot be tested by measurements, and that the patient is unable to estimate the amount of pain that the operation has averted. For these reasons, and as a general rule, it is, I think, advisable for the present to defer operating until the pain and swelling have reached the stage when morphine threatens to become necessary for their relief. Prior to this stage the operation may be offered but should not be urged.

CASE VI.

M. A. K., aged 58, in 1906 had the right breast removed for carcinoma. In October, 1907, the patient's hand and arm began to swell. The oedema steadily increased until her admission to the Middlesex Hospital under my care on May 30th, 1908. She suffers severe pain in the affected limb, and is unable to use it for any purpose whatever. Some thickening is present adjacent to the scar of the breast operation and enlarged glands can be felt in the right axilla. There is no sign of visceral deposits. On June 3rd I did a lymphangioplasty. The highest subsequent temperature was 99.4°. The limb was placed on an inclined plane. The same evening the hand had already diminished in size, and by the following morning its girth had lessened by 2½ in. On June 12th all the wounds being soundly healed, the stitches were removed. On June 19th it is noted that the patient has had no pain since the operation, except slightly in the shoulder and thumb. She left the hospital on June 30th, greatly relieved, but died of her advancing disease on the following August 30th. (Fig. 12.)

The following table shows the subsidence of the swelling.

	Right Side.			Normal Left Side.
	June 2nd (before Operation).	June 12th.	June 30th.	
	in.	in.	in.	in.
Hand	10	7½	8	7
Wrist	8¾	7½	7¼	5½
4 in. above wrist ..	12½	8½	10⅞	7½
Elbow	15	12¼	13	8¾
Biceps...	16½	14½	15½	10¼
Deltoid	19½	18¼	20	15

The slight increase in the diameters between June 12th and June 30th is due to a diminution of the daily period of elevation.

The operation, which produced hardly any constitutional disturbance, had already more than justified itself when the patient left the hospital.

CASE VII.

Mrs. T. was brought to me on May 13th, 1908, by Dr. J. J. Corkhill of Southport, with the following history. In 1897 she was operated upon for cancer of the right breast by Sir Mitchell Banks. An operation for recurrence was done in 1900; but later a recurrence again took place in the axilla and upon the wall of the chest, and was healed by *x* rays. About the beginning of February, 1908, the right arm began to swell at the elbow. For six months previously there had been occasional burning pain from the elbow to the shoulder and under the arm. Since the onset of swelling, the pain, though more constant, has not been as a rule so severe as to keep her awake. The arm has become completely paralysed, except that slight movement in the fingers remains. Two small ulcers were present in the axilla, and upon the chest there was an extensive eczematous surface with scattered nodules of growth.

For about a month a systematic attempt to get the ulcerated surfaces as clean as possible was made by Dr. Corkhill and by Dr. Stopford Taylor of Liverpool, who applied the method of cataphoresis for this purpose. On June 18th, 1908, I did a lymphangioplasty at the patient's home, with gratifying results at first. A metal spiral splint, suggested by Dr. Corkhill, proved very comfortable as a means of elevating the arm, and I have since used it habitually until quite lately. The temperature returned to normal on the third day, and the arm rapidly subsided, with relief to the pain. On June 28th Dr. Corkhill wrote to congratulate me on the entire success of the operation. But about July 10th lymphangitis appeared, and the skin became red and inflamed. Boracic baths were used and the inflammation subsided, but left the arm as large as before the operation. On July 20th an increase of cancerous growth was noticed. Pleural effusion showed itself shortly afterwards, and the patient died rather suddenly on August 9th.

In this case it is, I think, fair to ascribe the unsatisfactory result to the intercurrent dermatitis of the arm—a complication which I have only met with in this case.

CASE VIII.

At the end of October, 1908, I was asked by Dr. W. Hall Calvert to perform lymphangioplasty at Melrose upon a patient under his care. She was a spare and delicate old lady, upon whom, seven years previously, Professor Caird of Edinburgh had operated for a cancer of the left breast. The result of the operation was satisfactory until the development of a brawny arm towards the end of 1907. When I saw her on October 30th, 1908, there was no sign of local recurrence, nor any glands in the axillae. One slightly enlarged right supraclavicular gland could be felt. There was some thickening of the tissues above the left clavicle, but no definite mass could be felt there. No evidence of visceral cancer could be found, and there was no dyspnoea—a point of considerable importance. Paralysis of the arm was almost complete. It was greatly swollen, and of brawny hardness, and caused agonizing pain, which for some time past had necessitated the habitual use of morphine. The swelling of the arm did not extend to the scapular region. A bridle of skin in the line of the axillary scar prevented free abduction of the arm.

In every particular this case was an ideal one for operation, especially since the disease was latent and signalized its activity only by lymphatic swelling. Evidently the defensive processes of fibrosis were very active—a fact which I believe to be connected with the healthy open-air life led by the patient since her first operation.

With the assistance of Dr. J. M. Brydone and Dr. Calvert, I performed lymphangioplasty at once, all preparations having been previously made. At the same time a simple plastic operation was performed upon the bridle of skin which prevented abduction. As I did not see the patient again, I cannot give a table of measurements, showing the effect produced, and I must therefore quote Dr. Calvert's letters, at the risk of appearing egotistical. On November 3rd, Dr. Calvert wrote that the temperature had never been above 99°, and the pulse, though quick (120), had improved. The patient felt soreness, but the pain in the arm had disappeared, and did not subsequently return. Morphine was discontinued within a few days of the operation, and was not again needed. On November 11th, when the stitches were removed, no swelling remained except at the underside of the elbow. The patient admired her arm, which she said was "like a girl's." Her appetite and sleep were excellent, and her mental condition cheerful. Dr. Calvert concludes, and I may be forgiven for quoting his words, "I congratulate you on the splendid operation your scientific genius has invented."

A month after the operation the residual swelling under the elbow had quite gone, and on November 28th the patient wrote me a personal letter of warm thanks. Unfortunately, the apparent inactivity of the disease proved to be a delusion. About four months after the operation, slight pain returned in the arm, not, however, approaching the former agony, nor requiring morphine. Swelling also began to return. Early in 1909, the left side of the chest filled up with the fluid, and dyspnoea became a prominent symptom. Tapping was necessary on four occasions, and each time it gave marked relief. A large mass of recurrent growth was thought to be present. The patient sank and died about the middle of May, 1909. Dr. Calvert concludes: "She was most grateful always for the relief from the agonizing pain."

CASE IX.

This patient, a Red Cross nurse, aged 54, was admitted under my care with a swollen left arm on September 18th, 1908. In August, 1906, her left breast had been excised for cancer by Mr. Andrew Clark, who subsequently, in November, 1906, removed also the right breast for cancer. In November, 1907, shortly after a motor-car accident in which her right arm was injured, this arm began to swell, gradually increasing to its present dimensions. The swelling commenced at the shoulder, and travelled downwards to the elbow and the wrist. The arm is extremely painful, especially in the axilla. The swelling is greatest in the evening, better in the morning; and the pain is also more intense at night. Secondary glands are present in both supraclavicular regions. The right side of the chest, forming the inner wall of the axilla, is in an eczematous condition. Specimens of blood from the left arm and of lymph from the right arm were both found to be sterile. In this case lymphangioplasty was done on September 2nd, 1908, and the patient left the hospital on September 19th with the incisions soundly healed. The swelling of the arm was, however, practically unaffected.

Measurements of Arm.

	Aug. 29th.	Sept. 2nd.	Sept. 13th	Sept. 18th.	Dec. 7th.
	in.	in.	in.	in.	in.
Hand	7½	7¼	7¼	7¼	8½
Wrist	7¼	7½	7¼	7⅛	8
4 in. above wrist ...	9½	9¼	9¼	9	10¼
Elbow	12⅞	13	12¼	12⅜	12⅝
4 in. above elbow ...	13	12¼	12½	12½	12

About October 10th, 1908, this patient began to feel shortness of breath, and she was admitted to the cancer wards, under Mr. Murray, on November 10th. When I saw her next, on December 10th, closely-set subcutaneous nodules of growth were present round the posterior axillary fold, and lines of small similar nodules radiated thence round the back, definitely following and mapping out the track of the silk threads, at the ends of which the nodules ceased. She had experienced no relief from the operation. The right chest was full of fluid and the dyspnoea was severe. She died before the end of 1908.

Evidently in this case the silk threads had been passed through a region where active cancer cells were present, and had carried with them cancerous infection down the subcutaneous tissue of the back. This is the only case where I have met with such a complication. It is to be avoided by a rigorous selection of cases and by keeping away from the region of the axilla, carrying the silk threads from the arm to the back over the posterior fibres of the deltoid muscle. Under no circumstances must the threads be carried through a region of obvious cancerous infiltration.

CASE X.

Mrs. N., aged 61, was sent to me in August, 1908, by Dr. R. T. Bedford of Fulham. In August, 1904, a cancer was excised from the right breast at Dorchester Hospital. In April, 1908, she began to suffer very severe pain in the right arm. She had previously been able to use the arm quite naturally, and there was no sign of recurrence anywhere. Three weeks after the pain began the arm commenced to swell, and has since gradually increased in size. The patient continued to work hard as usual until July, 1908, when she was compelled to give up. In the following month the pain and swelling diminished to some extent.

The arm, which is much swollen, pits slightly on pressure, though the oedema approaches the solid variety. There is no paralysis. The swelling first began over the triceps and travelled gradually downwards. The hand is even now only slightly affected, though it becomes much puffed towards night. The pain is said to resemble a succession of blows upon the "funny bone" (ulnar nerve). At other times it is like a succession of stabs. It comes on in paroxysms, and sometimes she has a whole night free from it. Decided fullness is present below the clavicle. This appears to indicate recurrence in the subclavian glands. An examination of lymph and blood drawn from the arm shows that micro-organisms are absent from it. On September 5th lymphangioplasty was performed and a normal convalescence followed, the patient leaving the hospital on September 28th. But for reasons which I am unable to explain, the operation failed to benefit either the pain or the swelling. One can only conjecture that, for some reason or other, there was no adequate return flow of lymph from the region to which the silk threads were led.

CASE XI.

Mrs. N., a lady of advanced middle age, consulted Dr. N. Henry Hobart of Cork, on June 1st, 1908, for a carcinoma of the upper and outer quadrant of the left breast, about the size of an orange. The lump had been noticed only ten days previously, and had never caused pain. The skin was somewhat adherent. The breast and pectoral muscles were removed

without delay. Healing took place by first intention, and the patient was moved to her home on the sixteenth day. She was next seen on September 19th, and a small nodule was found to the left of the scar, halfway between the axilla and the line of the nipple. This was removed on September 19th, and the granulating surface left was not completely healed until the middle of November. About this time the left arm commenced to swell, and she began to suffer considerable pain in the arm. The pain, which became very severe, was referred chiefly to the palm of the hand. Her condition became gradually worse, and the arm was closely bound to the side by the contraction of the parts. On December 23rd Dr. Hobart asked me to see the patient with him, and lymphangioplasty was performed at her home on the following day. The subsequent after-treatment was made rather difficult by the very limited abduction and flexion allowed to the arm by the axillary contraction. Owing to the distance of the patient's home from London, I did not see her again, and I am unable to express the result of the operation in measurements. Dr. Hobart has, however, kindly supplied me with details of the further history of the case. The swelling of the hand completely disappeared within eighteen hours and pain in the limb had gone. On January 3rd, 1909, there was a slight return of the swelling in the hand. Two days later it had again disappeared, but there was a certain amount of "pitting" in the upper part of the arm, chiefly in its anterior surface. Elevation and extension of the arm were too irksome to be completely carried out, and after the first week the arm was simply laid on a pillow. Dr. Hobart states at this time: "The patient and her husband are greatly pleased with the enormous relief you have afforded her."

Six weeks after the operation it became impossible, owing to the advance of the growth in the axilla and chest, to move the arm in any direction, all attempts at elevation had to be abandoned, and morphine in small repeated doses became necessary. The forearm began to increase in size again towards the end of January, and later the upper arm, but the hand remained about of normal size until the second week in April, three weeks before death. Swelling then began on the dorsum, but the palmar swelling, which had been so painful, did not recur. Towards the end of February the supraclavicular glands became intensely hard, and caused considerable pain. At the end of March it was evident that the pleura was attacked. About April 8th the patient became suddenly delirious, and in her struggles a large quantity of serous fluid (30 oz. approximately) suddenly poured down the arm from the region of the axilla. Her mental condition remained seriously affected until the end, which came from exhaustion on April 30th, 1909. Dr. Hobart says in conclusion: "I know of course that in this case you were greatly handicapped by the condition of the parts, but I am quite confident that your operation afforded Mrs. —— a very great amount of relief. Her greatest pain, due to swelling, lay in the palm of her hand. She never again suffered from this or the tense fullness of the arm; any pain she had was in the shoulder and chest, which of course was not affected by your operation."

CASE XII.

Mrs. S., aged 57, living in Colorado, U.S.A., was brought to London in December, 1908, by her medical adviser, Professor Lloyd Miller, of Greeley, Colorado.

Her history was as follows: In 1895 Professor Miller successfully removed the right breast for cancer. Recurrence at the end of four years was treated by caustics, and the disease became quiescent. However, in 1907, twelve years after the primary operation, the right arm became brawny and extremely painful. In June, 1908, a Denver surgeon performed lymphangioplasty. Six threads were introduced, and still remain in position. The threads consisted of coarse silk twist, and were led from the wrist and along the inner aspect of the arm to the front of the shoulder, and thence to terminate over the posterior triangle of the neck. The operation temporarily reduced the swelling of the arm, but considerable swelling persisted, and the pain remained sufficiently severe to cause habitual insomnia, to require the habitual administration of morphine, and to induce the patient to cross the Atlantic in the hope of relief.

Upon examining the patient I found the case a favourable one for operation in regard to the absence of pleural effusion and of ulceration over the chest. The arm could be freely abducted, though movement of it aggravated the pain. One small nodule of growth was present on the side of the chest below the axilla.

In the right supraclavicular region the glands were slightly enlarged, especially one behind the sterno-mastoid. At the back the tissues nearly down to the angle of the scapula showed some oedematous hardening, but no nodules were present. It was evident that the lymph drainage provided by the first lymphangioplasty was partial and imperfect. None of the threads were carried along the back of the arm, which remained undrained. It was here accordingly that the principal swelling was located. The threads in front were carried to a region dangerously close to the area of operation. Here, along the coraco-brachialis and in the line of the threads was an indefinite hard band of tissue, which I suspected to be caused by cancerous infiltration along the threads. The pain felt by the patient was sometimes referred to this region, but it was mainly and usually a heavy diffuse pain felt all over the arm. The arm was nearly paralysed.

It appeared to me that some of the pain might depend upon nerve pressure, but that it was mostly due to fluid tension in the tissues. I accordingly advised a more complete lymphangioplasty as promising considerable relief from swelling, pain, and insomnia. The operation was performed on December 27th, 1908, the anaesthetic being given by Mr. H. P. Noble. In view of the possibility of cancerous infiltration in the line of the coraco-brachialis, this region was carefully avoided. Otherwise the operation was performed as usual, save that as there was some oedematous thickening over the scapula some of the threads were led further down than usual, terminating in the lumbar region, while others were led across the middle line of the back to terminate over the opposite scapula.

As usual, marked and fairly rapid subsidence of swelling followed the operation. Relief of pain, however, was slow in coming, and insomnia remained troublesome. These unusual features of the case appeared largely due to the patient's neurasthenic condition, produced by long-continued chronic pain, and aggravated by the morphine necessary for its relief. At times her condition bordered on melancholia, and she temporarily lost the wish to live.

Morphine was only given twice subsequently to the operation. A tablespoonful of vibrona at bedtime and a course of aspirin were substituted for it, and although the accustomed sedative was at first acutely missed, sleep gradually improved and pain diminished. Dr. Lloyd Miller's co-operation in the after treatment of this difficult case was invaluable. A course of *x* rays to the region where growth was suspected was given by Mr. C. R. C. Lyster, and continued later in New York, and this appeared to benefit the pain in the coraco-brachialis region which was still troublesome at times.

The arm subsided slowly and continuously. The patient left the home on January 21st, 1909, to return to America.

The measurements of the arm were as follows:

	Right Arm.		Left Arm.
	December 25th, 1908.	January 11th, 1909.	
	in.	in.	in.
Wrist	6⅞	6	5⅝
4½ in. above wrist	8½	7	7¼
Elbow	11	9½	7⅞
Just above elbow	10¾	9¼	—
3 in. above elbow	10⅛	10⅛	8⅛

In this case, as in some others, the measurements do not give a fair idea of the effect of the operation. A small diminution in calibre, or even no diminution at all, may be accompanied by a very marked fall in the fluid tension within the tissues, so that the arm which was hard becomes soft and flabby. Such was the case in the present instance.

When Mrs. S. left the home she still had occasional pain in the arm, but on February 27th Dr. Miller was able to write that the swelling of the arm had entirely disappeared with the exception of a slight soft swelling at the shoulder, which caused no discomfort. Pain had all left the arm and hand, and she was sleeping well from night to morning, a thing she had not been able to do for more than a year previous to the operation. Her mental condition was contented and happy. Dr. Miller's letter concluded with a very favourable estimate of the value of lymphangioplasty, which I forbear to quote, leaving the case to speak for itself. On April 26th, in another letter, he said, "Mrs. S. is still doing fine."

CASE XIII.

On April 22nd, 1909, I saw at Norwich with Dr. H. J. Starling, a lady aged 40, and unmarried, with the following history: In July, 1908, she was operated on for scirrhus of the right breast. The following November she was again operated on for a recurrence near the scar. In January, 1909, *x* rays were applied for a month for further recurrence in the scar on the advice of Mr. A. A. Bowlby. About April 8th the case came under the care of Dr. Starling. At this time she had pain all over the right breast, and increasing very painful oedema of the whole of the right arm, with great dyspnoea and deficient air entry to the right lung. The daily use of morphine was necessary, together with inhalations of oxygen.

The case was obviously one in which death was not far distant, and one in which the risk of the anaesthetic could not be overlooked. But as the skilled services of Dr. Starling were available for the anaesthetic, and as the sufferings of the patient were extreme, I felt that the operation could be offered to the patient if the pleural fluid in the right sac could be safely removed. This was done, and the operation performed immediately afterwards. There was considerable shock owing to the patient's weak condition; but the wounds healed by first intention, and pain and swelling disappeared from the arm and hand. Subsequently the pleura had to be tapped on several occasions, and the patient went downhill rapidly. Swelling did not return to the hand, forearm, or lower part of the arm, but it appeared in the axilla, and extended across the chest to the left breast. She died about May 24th. I did not see the patient subsequent to the operation, but in Dr. Starling's opinion, expressed recently in reply to a letter from me, it was "a distinct and undoubted success." He adds: "I should unhesitatingly recommend the operation again in such a condition as was hers."

Case xiv.

This lady, aged 37, was sent to me by a well-known surgeon who had operated for carcinoma of the left breast about two years previously. Closely following upon the shock of the death of a near relative from cancer, recurrence made its appearance on the side of the chest and in the supraclavicular region, while a vague induration appeared in the axilla. Radium treatment was applied in Paris, without much benefit. About the end of April, 1909, swelling of the arm became very marked, and pain and discomfort from this cause began. Radium treatment was recommended by Dr. Louis Wickham for this condition, but the patient herself felt that the applications aggravated the swelling. Radium treatment was continued in England after the patient's return. She continued, in spite of her sufferings, to lead an active life, and although her condition would have confined most women to bed, she frequently spent a whole day in the hunting field, carrying the swollen arm on the saddle in front of her. Her determination to fight and conquer the disease was truly heroic. She had noticed that confinement to the house seemed to quicken the march of the disease—a fact she had observed during an attack of mumps early in 1909—and had lived an active open-air life in consequence. I first saw her on August 28th, 1909. She had then an indolent, ulcerated, or rather eczematous, cancerous area over the front and side of the left chest, one or two very large glands in the supraclavicular region, and a vague induration in the armpit. There was also some impairment of resonance at the base of the left lung. She had had attacks of shortness of breath. The arm was hard, cyanotic ,and very swollen, the swelling extending up to and involving the shoulder, but not at that time covering the scapular region.

I pointed out that the case was not a favourable one for my operation, in view of the activity of the disease and the doubt as to the condition of the pleura. The patient and her husband were, however, most anxious for the performance of lymphangioplasty, even if the relief would last "only three days." The case seemed to be one where the wishes of the patient could be allowed the deciding voice, and on August 29th I operated by the usual method.

The immediate result was most striking and satisfactory. The pain ceased from August 30th, and the hand and forearm rapidly subsided and regained their normal colour, while the tension of the upper arm was much diminished, and it became comparatively flabby. Movement also returned to the fingers, wrist, and elbow. The stitches were removed on September 6th, when all the incisions were soundly healed. The only incident in a smooth convalescence was an alarming attack of dyspnoea, necessitating the use of oxygen, which occurred about the fifth day. The patient went down to dinner on September 6th, and at this time her only trouble was sleeplessness. On September 9th she motored 60 miles into the country, and though rather exhausted everything seemed going well. From this time, however, the swelling in the arm rapidly recurred. On September 18th I found on examination much fluid in the pleural cavity, and drew off a quart of straw-coloured effusion. The cancerous area in front of and at the side of the thorax had rapidly extended and was involving the scapular region, to which the threads had been led, blocking up the new lymphatic drainage system. On September 25th the arm was as bad as before the operation, and there was oedema over the whole front of the chest and the left supraclavicular region. The patient's mental attitude had changed from one of eager fight to one of serene resignation. From this time morphine was administered regularly, and the patient died in December, 1909.

It may be said that in this case the operation was unjustifiable. This opinion would ignore the patient's imperative wish to have it tried and the subsequent period of ease, which, though measured by days, must have been an unspeakable relief after months of torment. The respite could have been obtained by no other method with which I am acquainted. The surgeon who removed the growth went to see the patient some days after the operation, and expressed himself satisfied that the operation had justified itself.

Case xv.

A. T., aged 54, was admitted into the cancer wards of the Middlesex Hospital on September 25th, 1909. In 1899 a nodule was excised from the right breast. In 1902 the breast was removed for local recurrence. In 1904 five nodules appeared near the scar, and ulceration supervened later, but healed under *x* rays in 1908, only to break out again later. Growth and ulceration appeared in the axilla, but pain remained absent until the development of a dropsical right arm about June, 1909.

On admission in September, 1909, she was very ill and cachectic, with extensive nodular growth, in places ulcerated, over the sternum and right chest wall. The axilla was a deeply ulcerated chasm with a floor of offensive sloughy growth. On December 2nd, at the patient's earnest wish, I consented to do lymphangioplasty if the ulcers could be got into a cleaner condition. For this purpose the axillary cavity was filled with acetone for half an hour daily. The application was painful, and on December 18th a severe haemorrhage of about a pint occurred from the axillary cavity, with slight temporary benefit to the swelling of the arm. On January 8th, 1910, the general condition showing some improvement, lymphangioplasty was performed in the usual manner.

The operation caused me a considerable amount of anxiety, for the axillary ulcer, spreading from the front, had left only a bridge of normal skin about 6 in. wide posteriorly, and through this narrow strait the silk threads had to be led. The risk of failure had been fully explained to the patient, and she desired to submit to it rather than remain in her condition of pain and misery. Fortunately, no failure of asepsis occurred, a fact which reflects great credit on the house-surgeon, Dr. A. O. English, and on the nursing staff, and her convalescence was without incident. Although the contraction of the axillary tissues allowed of no abduction and only the slightest elevation, it was noted on January 14th that the hand and forearm had much improved, and the skin of the hand showed marked creasing. The arm had not much diminished in size. On January 19th the registrar notes "There is very great improvement in the condition of the arm. Swelling in the hand and arm has diminished wonderfully." Before the operation the hand and arm and even the fingers were quite paralysed, while the patient can now move both the wrist and elbow, and can grasp firmly with the hand. The patient especially drew my attention to the increased vertical mobility of her shoulder, and to the diminution of swelling behind the shoulder-joint.

On January 23rd, in a letter written to me with the hand which had been completely paralysed, she expressed herself delighted with the results of the operation, especially in regard to the relief of pain. In order if possible to check the advance of the disease in the direction of the threads, a course of *x* rays is being applied to the region of the scapula.

The measurements of the arm are as follows:

	Right Arm.		Normal Left Arm.
	December 2nd, 1909.	January 19th, 1910.	
	in.	in.	in.
Palm of hand	8¼	7	7
Wrist	7⅜	6½	6½
Forearm 4 in. below elbow	11½	8¾	7⅞
Arm 4 in. above elbow	12¾	11¾	9
Arm 8 in. above elbow	12⅝	11⅛	10⅜

Remarks

ON A

CASE OF RECURRING JAUNDICE IN FOUR SUCCESSIVE PREGNANCIES, WITH FATAL JAUNDICE IN THREE SUCCESSIVE INFANTS.

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A woman who had never had jaundice at any other time had jaundice in her four successive pregnancies, and her first three infants died of jaundice. In the fourth pregnancy the woman was treated with urotropin and sodium salicylate, and, though she became somewhat jaundiced about the sixth month, she had a healthy child.

A married woman, aged 35, two months pregnant, came to St. George's Hospital on December 8th, 1908, in order to see if anything could be done to prevent the sequence of events which had characterized her three previous pregnancies. In each of these pregnancies she had become jaundiced about the sixth month, and subsequently suffered from itching of the skin. Throughout all her pregnancies she has had nausea, but has never had vomiting. She is always constipated, and this is much worse during her pregnancies. Her three children were all born six weeks before term, and, though not jaundiced at birth, rapidly became so, and died; the first, a boy, died at 5 months; the second, also a boy, at 5 months; and the third, a girl, at 16 days. She has not been able to suckle any of her children. She has never had jaundice or pruritus except during these pregnancies; she has not had biliary colic or enteric fever; and, as far as she knows, jaundice has not occurred among her own relations or in her husband's family.

During her fourth pregnancy she was treated with urotropin and salicylate of sodium, with a view of preventing infection and obstruction of the biliary tract, and the occurrence of grave jaundice in her infant. This, however, was not entirely successful, for she became jaundiced about the sixth month, and had pruritus, though she did not feel so uncomfortable as in her previous pregnancies. There was no enlargement of the liver or spleen. On June 3rd, 1909, a healthy 8 months boy was born. He did not show any sign of jaundice; when 2½ weeks old he was admitted into the hospital. There was nothing really the matter with him; the liver, spleen, and urine were healthy. He was seen again on March 1st and 10th, 1910, when he weighed 16 lb., and was in very good health. He has never had any jaundice.

In a number of recorded examples successive infants of healthy parents have become jaundiced and died shortly after birth. Arkwright reported a family of 15 children, 14 of whom had jaundice, with 4 survivals; the mother had had jaundice when 4 years of age, and had a "rather sallow, earthy complexion." Busfield described 9 cases in one family (one necropsy, no changes in liver or ducts). Auden recorded 8 cases of jaundice out of 12 pregnancies in one family; in 4 of his cases a necropsy was made, and failed to show any lesion in the liver or bile ducts. Blomfield reports 5 cases, and Pfannensteil 3 cases in one family.

In this condition the infants are not born jaundiced, and there is not any evidence of syphilis either in the parents or in the infants. It is familial and not hereditary. The only instance, apart from my case, in which the mother had had jaundice was in the family reported by Arkwright. It is noticeable that this condition has been recorded in families characterized by a large number of pregnancies some of which have aborted, miscarried, or terminated before full time or in stillbirth. In Arkwright's series there were 15 pregnancies, in Auden's 12, in Busfield's 10. In Auden's and Busfield's series the first child escaped, and may have done so in Arkwright's, and was very slightly affected in Blomfield's series. The later children seem to suffer rather more severely than the earlier. Both sexes are affected.

The cause of the jaundice is obscure. Pfannensteil, who calls the condition "habitual icterus gravis of the newborn," regards it as an intensified form of the physiological jaundice of newborn infants, and not as a grave infective icterus. As there is no evidence of any structural change in the liver and bile ducts, it is tempting to assume that it is toxic, and is due to some form of maternal toxaemia or infection. In this connexion Blomfield points out that in his series the mother suffered much from vomiting during her pregnancies. The occurrence of abortions, miscarriages, premature and still births in some of the series also fits in with this hypothesis. Against the view that it is due to maternal toxaemia or infection it might be argued (1) that the offspring do not, as a rule, become jaundiced until a day or so after birth, and (2) that the infants suffer far more than the mothers. In reply it may be urged, by way of analogy, that hereditary syphilis may not produce any obvious change until after birth, and that it may, and often does, affect the infant's health much more than the mother's. It has been suggested that the jaundice might be due to toxins contained in the mother's milk; but this is improbable, as the jaundice often appears on the second day of independent existence, and in some cases, as in my own, the infants have not had their mother's milk.

Recurring jaundice during pregnancy has been recorded by Benedict in two sisters; these patients had repeated attacks of jaundice and severe pruritus with hepatic enlargement during pregnancies; these symptoms disappeared after abortion or premature delivery. Their infants were not jaundiced. The condition in my patient was similar except that she did not show any hepatic enlargement, and that her first three infants were jaundiced. It is difficult to avoid the conclusion that this recurring jaundice during pregnancy is toxic.

In the family reported here there is the remarkable, and, as far as I know, unrecorded, association of the recurring jaundice of pregnancy in the mother with fatal jaundice in the offspring. It may, perhaps, be suggested that this association of recurring jaundice during pregnancy in the mother and of grave jaundice in her newly-born infants is the complete form of a disease of which Arkwright's, Auden's, Busfield's, Blomfield's, and Pfannensteil's series on the one hand, and Benedict's cases on the other hand, are incomplete forms.

The most reasonable method of treatment appears to be to treat the mother during her pregnancy with biliary and intestinal antiseptics such as urotropin, salicylate of sodium, small doses ($\frac{1}{20}$ grain) of calomel, tetrachloride of naphthaline, guaiacol; to regulate her diet, and to prevent constipation. The infant's jaundice should be treated on the same lines, and if there are urgent symptoms, by subcutaneous transfusion of saline solution. In view of the probability that the infantile jaundice is due to maternal toxaemia it is probably wise to adopt Auden's suggestion of preventing the mother from suckling the infant. In my case it would not be justifiable to insist that the administration of urotropin and salicylate to the mother during her pregnancy was responsible for the escape of the infant, as she herself had some jaundice.

BIBLIOGRAPHY.

Arkwright, *Edin. Med. Journ.*, 1902, xii, 156. Auden, *St. Barth. Hosp. Rep.*, 1905, xli, 139. Benedict, *Deutsche med. Wochenschr.*, 1902, xxviii, 296. Blomfield, BRITISH MEDICAL JOURNAL, 1901, i, 1142. Busfield, ibid., 1906, i, 20. Duguid, ibid., 1906, i, 319. Pfannensteil, *München. med. Wochenschr.*, 1908, lv, 2233.

PIGMENTATION OF THE BUCCAL MUCOSA IN PERNICIOUS ANAEMIA.

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PIGMENTATION of the mucous membrane of the mouth in pernicious anaemia is apparently a very rare condition, and as such pigmentation has until lately been regarded as almost pathognomonic of Addison's disease, it is important to place on record all cases of pernicious anaemia in which it is found. The following case presented the phenomenon in a very well marked form.

The patient, a man aged 28, was admitted to hospital under my care on January 3rd, 1910, complaining of weakness and palpitation. He was employed as a groom, but was for eight years in the army, and during that time suffered, in the summer of 1908, from an attack of moderately severe malaria, for which he was treated at first by quinine, and later for a period of one week by an arsenical mixture. He left the army at the end of 1908, and remained in good health until the commencement of his present illness, three months ago.

On admission he presented the typical appearance of pernicious anaemia, but in addition to the uniform lemon-yellow colour of the body there were present a few scattered freckle-like patches of deep brown pigmentation on the face below the eyes and around the angles of the mouth. The most striking feature, however, was the pigmentation of the lips and mucous membrane of the inner aspects of the cheeks. The lower lip on its inner aspect was of a bluish, inky colour, and this discoloration was prolonged in the inner aspect of the mouth on both sides, principally on a level with the line of junction of the teeth, in the form of scattered inky patches. Similar patches less deep in colour were also present on the inner aspect of the right cheek below the level of the teeth. The teeth, especially those in the upper jaw, were extremely foul, with pus exuding from some of the sockets. The first blood examination showed a diminution in number of the red cells down to 480,000 per c.mm., with a colour index of 1.5; there was extreme variation in the size of the red cells, with poikilocytosis, but nucleated cells were scarce, only two, both of megaloblastic type, being found in a count of 500 white cells. The white cells numbered 5,000 per c.mm.; blood pressure 115 mm. Hg; no HCl in gastric contents; haemic murmurs present; spleen just palpable; von Pirquet's tuberculin test negative.

Under treatment by arsenic the red cells have increased to 1,750,000 per c.mm., with a colour index of 1.4. The mouth pigmentation is, if anything, less marked than before, doubtless owing to the fact that the contrast between it and the remaining mucous membrane is now less sharp owing to the gradual return of the latter to its normal colour.

In addition to this case only four others seem to have been recorded, and that in spite of the careful examination to which the mouth is usually subjected in this disease. Hale White[1] was the first to call attention to the symptom at the Association of Physicians in May, 1907. His case was that of a man, aged 22, who was admitted to Guy's Hospital suffering from increasing weakness, and who on examination was found to present an abnormal pigmentation of the face, trunk, and limbs, partly in the form of small, dark brown, freckle-like spots, and partly in more diffuse brown areas. The diagnosis of Addison's disease was at first suggested, and the presence of well-marked pigmented streaks and spots on the inner aspects of the cheeks seemed to confirm this, but, relying on the other features of the case, Hale White inclined to the diagnosis of pernicious anaemia, and this was confirmed at the *post-mortem* examination. The second case is recorded in the *Guy's Hospital Reports* for 1909 by Herbert French.[2] It is that of a woman, aged 33, who showed the typical symptoms of pernicious anaemia. In this case there was widespread pigmentation of the skin in patches and specks, pigmentation of the buccal mucosa on the inside of the cheeks, and purulent tooth sockets. Here also the diagnosis was later confirmed *post mortem*. In both of these cases, and also in mine, the use of arsenic

ntedated the appearance of the pigmentation, but as in my case, according to the patient's statement, that drug had only been taken for a week prior to my seeing him, there seems little reason to attribute the discoloration to its use, more especially since Rolleston[3] has lately recorded a case in which arsenic had not been taken, and in which there was inky pigmentation along the lower lip and patches on the inner aspect of both cheeks. The only other reference to the condition which I can find is by Lazarus[4] in Nothnagel's *Encyclopaedia;* he states that he has seen one case in which there were present on the tip and back of the tongue and on the mucous membranes of the cheeks circumscribed reddish-brown, mahogany-like discolorations of punctate to dime size, which were undoubtedly the sites of hyperaesthesia, and probably the result of haemorrhages.

The symptom is possibly not so rare as these few observations would seem to suggest, but if so it is all the more necessary that the possibility of its presence should be recognized.

References.

[1] Hale White, *Quarterly Journal of Medicine*, vol. i, p. 108. [2] Herbert French, *Guy's Hospital Reports*, vol. lxiii. p. 104. [3] H. D. Rolleston, *Proc. Royal Soc. Med.*, vol. iii, No. 1, p. 9 (Clinical Section). [4] Lazarus, Nothnagel's *Encycl. of Pract. Med.*, Diseases of the Blood, p. 270.

The Morison Lectures

ON

EPILEPSY.

Delivered before the Royal College of Physicians of Edinburgh.

BY

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LECTURE III.—Treatment of Epilepsy.

The treatment of so multiform and persistent a malady as epilepsy requires to be considered from several points of view. What might be called the hygienic and disciplinary treatment was more seriously carried out in the days before the introduction of the bromide salts than at the present time.

Celsus,[1] who gives a very meagre account of the disease, has some suitable remarks to make upon the general handling of a case of epilepsy. He gives some useful hints upon diet and general hygiene, with special reference to exercise. He says:

> The diet ought to be of the middle kind, for the case requires strength, and crudities are to be guarded against. He should avoid undue exposure, wine, venery, and all business. The body may be gently rubbed in the morning. Then let him take a walk as long and as straight as possible; after the walk let him be rubbed in a tepid place, not less than 200 times; let him eat a little, and then rest.

The French physicians of the early part of the nineteenth century used a large assortment of drugs, and, on the whole, obtained good results, but they also submitted their patients to dietetic formulae and general discipline.

Let me quote the method of treatment prescribed by an English physician during the years immediately preceding the introduction of the bromides in the treatment of epilepsy. Sir Edward Sieveking,[2] in his work on Epilepsy published in 1858, writes:

> If I were to formularize the prevailing mode of treatment which I myself adopt, I should say it consisted in local derivation and counter-irritation directed against cerebral congestion, and in general roborants or tonics. The selection of the special mode in which the latter indication has to be carried out necessarily depends upon the results of the inquiries into the condition of the individual organs.
>
> The great prevalence in epilepsy of headache, either as an habitual affection, as a precursor to the attack, or as a sequel, accompanied by other symptoms indicating a congestion of the head, suggests attacking the head by more or less severe counter-irritants. . . . I am also satisfied that in some of our cases the apparent cure was mainly due to the application of setons.
>
> The air the patient breathes, the water he drinks, and his ablutions, his daily occupation and habits, his amusements, his food and beverage, his clothing, his mental and moral history, and his prospects in life should be inquired into in order to determine whether, or in how far, one or more of those elements require modification.

Since the introduction of the bromides by Sir Charles Locock[3] in 1857 most epileptics at some period in the course of their malady have probably been treated by these drugs. The universal prescribing of the bromides during the past half-century, with more or less success in subduing the convulsions, has to a large extent deprived the patients of the advantages which may be obtained from the hygienic, dietetic, and disciplinary lines of treatment.

As the physical and mental development of epileptics varies as much as in conditions of health, it is obvious that lines of treatment suitable for the physically robust and mentally capable may be detrimental to the physically frail, and impossible in the dementia of the confirmed disease. We have, therefore, in every case of epilepsy to treat the individual and not solely the disease.

1. It is well known that epilepsy may undergo spontaneous cure even after the convulsions have lasted for a number of years.

2. There is a considerable percentage of epileptics in whom the disease is characterized by the infrequent occurrence of fits and the absence of any obvious mental impairment. These cases constitute a favourable type of epilepsy, and may be treated medicinally and dietetically on the lines which will presently be laid down.

3. In a large number of cases the disease would seem to be excited in predisposed persons by reflex irritation of the peripheral organs. I would especially call attention to the value of a careful examination of (*a*) the nose, for foreign bodies or adenoid growths in children, and nasal polypi in adults. (*b*) Of the eyes, for errors of refraction (which are particularly frequent in epileptics), and their correction by suitable glasses. (*c*) Caries of the teeth requires the necessary attention, and I have frequently observed great improvement in the fits after the adjustment of suitable artificial means of mastication. (*d*) All disorders of the stomach and intestines—dyspepsia, constipation, and worms—should be carefully attended to. Epileptics, being notoriously big eaters, require great care in the regulation of their meals and should be encouraged to fully masticate their food. (*e*) Local disease of the pelvic organs in women requires attention, but too much stress ought not to be placed upon those disorders even in predisposed persons, although their treatment by suitable remedies should be carried out.

4. There are many cases of epilepsy in the early stages of which treatment in an institution may be either impossible or inadvisable. Under those circumstances the patient ought to be placed under the care of a capable and properly trained nurse-attendant. The satisfactory carrying out of this instruction will often eventuate in most gratifying results.

5. Epileptics suffer notoriously from lowered vitality and sluggish circulation in the extremities. For those warm baths, spinal douches and massage are desirable. The use of the hot bath is most necessary, not only for the ordinary ablutionary purposes, but to promote skin excretion, which is regarded by some writers as being of a toxic nature. Under all circumstances a certain amount of daily exercise in the open air is necessary; walking, running, tennis, golf, croquet, and football, may all be indulged in freely. It is scarcely necessary to point out that such exercises as bicycling, rowing, swimming, and riding, are to be avoided.

6. An out-of-door life is usually regarded as the most suitable for an epileptic, but this entirely depends upon the physical vigour of the patient; hence farming or market-gardening should only be recommended to those of a robust constitution, while for the frail epileptic, drawing, modelling, book-keeping, and such semi-sedentary forms of work are quite suitable. On the other hand, there are many who are able to continue their professional work or business without difficulty, and with advantage to themselves, and with benefit to their disease.

7. I do not think it right that those subject to even infrequent epileptic seizures should be sent to school along with normally healthy boys and girls. It is neither fair to the epileptic nor agreeable to his or her companions. In all cases private education is to be recom-

mended. In cases with marked mental impairment special methods of teaching ought to be adopted, of which the Sloyd system is one of the best.

8. If the disease develops during a period of mental strain preceding an examination complete abstinence of work should be temporarily enforced; but when the type of the disease has revealed itself education should be resumed on the lines already laid down.

9. The marriage of epileptics should be discouraged. There is a popular belief that if an epileptic girl is married the disease will thereby be cured. I have met with isolated instances of this, but in the majority of cases pregnancy and the puerperium are especially prone to increase fits, or, at the best, to exert no change at all upon them.

It is now necessary to enter with some detail into the medicinal and dietetic remedies commonly adopted in the treatment of epilepsy. In the first place, I wish to emphasize the importance of separately considering the treatment of recent epilepsy from that of the confirmed disease.

THE BROMIDES.

There is no single specific remedy in the treatment of epilepsy, although the alkaline salts of bromine come nearest to this definition. But the influence of the bromides upon epileptic convulsions is variable and uncertain.

I. Bromide medication may arrest the seizures immediately, or within a short period of their administration, temporarily or permanently. In this division most of the curable types of epilepsy are found—cases characterized by an absence of mental impairment and with fits recurring only at long intervals. If any given case is capable of arrest, a satisfactory response will be apparent within a comparatively short period of commencement of the bromide treatment. In 86 cases, in which the fits were arrested for periods varying from two and a half to twenty-two years, rather more than 50 per cent. yielded to treatment within the first twelve months of regular bromide administration. (Out of 366 cases of epilepsy, 86, or 23 5 per cent., belonged to this class.)

II. The bromides may induce a lessening in the severity and frequency of the seizures. This is the common temporary result of bromide treatment, and is what may be confidently expected in the majority of cases in the early stages of the disease. Sometimes the change is effected by the arrest of the major seizures, the minor continuing; or the bromides may change the time-incidence of fits from the waking to the sleeping hours, or vice versa. (In the series of 366 cases of epilepsy in which bromide medication was continued over long periods, 105, or 28.7 per cent., belonged to this class.)

III. The bromides may exert no influence at all upon the disease, or may even augment the frequency or severity of the seizures. (In the series already quoted, 175, or 47.8 per cent., remained unimproved, and became confirmed epileptics.) These numerical facts may be given in the form of a table showing the general results of treatment by the bromide salts in 366 cases of epilepsy.

TABLE.

Cases of arrest	86, or 23.5	per cent.
Cases showing improvement ...	105, or 28.7	,,
Confirmed cases	175, or 47.8	,,
	366, or 100	,,

These statistics are in general harmony with the observations of other writers on the subject; they demonstrate clearly how large a percentage of epileptics derive no benefit from bromide treatment. This is within the knowledge and personal experience of most physicians who have had to treat even small numbers of epileptic patients. A further conclusion drawn from the study of these figures is that, under the influence of the salts of bromine, a considerable number of cases of epilepsy are temporarily "cured," or materially improved. It is, however, within the experience of most observers that no complete record can be obtained of the total number of cases which are relieved by these means, as, more especially amongst hospital patients, there is a tendency, once the fits have been temporarily arrested, for the patient to cease attendance. Notwithstanding the unfavourable results of treatment in many cases, it would be an error to say that bromides are useless in the treatment of epilepsy. If 50 per cent. of the cases derive benefit from the administration of these drugs, then all cases, especially of recent onset, should be given the benefit of the drug for a time. It is not the bromide salts as a remedy, but the method of their administration, which is harmful, and to this attention will be directed immediately.

The physiological action of the bromide salts consists in lessening the irritability of the central nervous system, and in exerting a subduing effect upon reflex activity and cerebral function. The potash salts of bromine also induce a slowing of the pulse and the action of the heart. In medium doses (30 to 60 grains) the bromides produce muscular fatigue, a slowing of the mental processes, dulling of the sexual function, and of the skin sensibility. In large doses (150 to 225 grains) the speech becomes slurred, there is abolition of the palatal and pharyngeal reflexes, while frontal headache and a limitation of the power of thought soon ensue. Salivation, lowering of the body temperature and of the pulse-rate, catarrh of the stomach and of the respiratory mucous membranes, are general bodily symptoms resulting from continual use of large doses of the bromides. It is therefore obvious that the prolonged and injudicious use of the bromides may give rise to toxic symptoms known as "bromism." This condition is characterized by a blunting of the intellectual faculties, impairment of the memory, and the production of a dull and apathetic state. The speech is slow, the tongue tremulous, the saliva may flow from the mouth, the gait is staggering, and the movements of the limbs feeble and infirm. The mucous membranes suffer so that the palatal sensibility may be abolished, and nausea, flatulence, and diarrhoea supervene. The action of the heart is slow and feeble, the respiration shallow and imperfect, and the extremities blue and cold. An eruption of acne frequently covers the skin of the face and neck.

Dosage.

Bromide treatment should be commenced at the earliest possible time after the onset of the fits, as there is a greater prospect of arrest or improvement during the first five than during the second five years of the disease, although arrest of the seizures may occur after a duration of twenty years. The administration of the bromides should be continued for a period the duration of which is to be determined by the study of each case separately, but should not be less than two years. The dose usually given is, I think, too large. If benefit does not follow a daily dose of from 45 to 90 grains of one or a combination of the bromide salts, some other remedy or method of treatment should be sought for and applied. Dr. Clouston long ago pointed out that no lessening in the number of fits occurred when the daily dose of bromide exceeded 75 grains.[4]

The large doses sometimes prescribed—from 100 to 150 grains daily—although no doubt suppressing the seizures for a time, induce other and more serious phenomena—namely, those of bromism, already described Moreover, the bromides have an accumulative action Laudenheimer[5] has shown that an epileptic taking 10 grams (150 grains) of bromide salt daily for eight days only excreted a total of 35 grams, or less than half the quantity ingested during that period. He also showed that no results followed its administration until an equilibrium was established between the intake and the output. This occurs on saturation of the body, and requires about 30 grains of bromide to be given daily for three or four weeks. It is also largely dependent upon the amount of sodium chloride taken in food.

Methods of Administration.

Most physicians have their own methods of prescribing the bromides in epilepsy. As already mentioned, large doses are not necessary, nor are they effectual, but both the amount of the dose and the frequency and time of administration should be gauged by a study of individual cases. When I come to speak of the dietetic treatment in epilepsy reference will be made to the deletion of salt, in the form of sodium chloride, from the dietary. This is an important modification in the treatment of epilepsy, as much smaller doses of the bromide may be prescribed. The potassium, sodium, strontium and ammonium salts are the most usually administered. Each is of value, but the sodium salt is the most efficacious. If the bromides

are prescribed in combination the dose should not exceed 60 grains in the twenty-four hours. The bromide of strontium is less useful, but may be given in smaller doses, or in combination with one of the other salts.

Combinations of the bromide salts with other remedies which may have some influence either upon the nervous or circulatory systems, have been from time to time recommended, and are found useful in some cases. A combination of the bromides and digitalis has been found very satisfactory in cases of low arterial tension, irregular action of the heart, or failing compensation with valvular disease. Chloral hydrate may be added with great advantage in cases of prolonged serial epilepsy, or of the status epilepticus. The bromides and the glycerophosphates form a valuable combination in weak or debilitated cases, more especially in young women with anaemia or neurasthenic symptoms. Bechterew recommends the conjunction of the bromides with adonis vernalis, and sometimes with codein. A combination of a bromide salt with borax has been of service where the bromides or borax, separately, have been of little use.

Bromide, Picrotoxin, and the Arseniate of Antimony.[6]

Of the combinations of the bromides with other remedies I have found Gélineau's formula the most useful and satisfactory. It is prescribed in the form of *dragées* containing 1 gram of the potassium bromide, $\frac{1}{3}$ mg. of picrotoxin, and $\frac{1}{2}$ mg. of antimony arseniate. It has been used extensively in France, but does not seem to have been adopted to any extent in Britain. I have been in the habit of prescribing it during the past two years in those cases of epilepsy in which the pure salts of bromine are either not well borne or have been proved to be ineffective. In large doses picrotoxin is a producer of convulsions, leading to spasms of a tetanic character, with death in coma. In small doses it is theoretically supposed to lessen the tendency to cerebral vaso-constriction, which is believed by some writers to be a fundamental factor in the causation of epileptic fits. I have used the *dragées* in all forms of epilepsy with considerable success. My experience is that they are:

1. A more successful remedy in most cases than a single bromide salt.
2. Less likely to lead to troublesome symptoms—that is, acne or bromism.
3. More easy of administration, being especially convenient when it is desired either to augment or diminish the dose.

The method of prescribing them is simple—one *dragée* is taken either during or immediately after a meal, thrice daily for a week, an additional *dragée* being added weekly until the patient is taking four, five, or six per diem. I have found six *dragées* a day usually sufficient to hold the fits in check, although, according to Gélineau, as many as ten or twelve daily may be taken. My experience of the remedy has not been sufficiently long to say definitely whether it is better in all cases than bromide alone, but with two or three exceptions it has been of great service in diminishing or even arresting fits in cases in which the bromides alone have been of no use.

TREATMENT BY DRUGS OTHER THAN THE BROMIDES.

In the days before the introduction of the salts of bromine in the treatment of epilepsy, many remedies were used, sometimes with marked success, as may be seen from the satisfactory results obtained by Herpin, Reynolds, and others. On account of the not infrequent failure of the bromides to arrest or even to ameliorate epileptic attacks, it will be found necessary to prescribe some other medicinal remedy, and a large number have been from time to time advocated and employed. Perhaps the drug most frequently used as a substitute for, or as an adjuvant to, the bromides, more particularly in England, is *borax* (sodium biborate). Introduced by Gowers many years ago as an antispasmodic, it has met with considerable favour in cases where the bromides have been of little service. Unless in combination with a salt of bromine, I have not found it of particular use. It may be given in doses of from 10 to 30 grains thrice daily, but is apt to induce troublesome gastro-intestinal symptoms. If continued over long periods, it may lead to cutaneous eruptions of a psoriasis-like character.

Belladonna was the chief anti-epileptic remedy of the pre-bromide days, and is still used in some cases with marked benefit when the bromides or other remedies have proved unsuccessful. It formed the chief remedy of Trousseau, Hufeland, Herpin, Reynolds, and others, and in the hands of the first named was mainly used in those cases complicated with nocturnal incontinence of urine. A combination of bromide and belladonna may be found useful in cases of otherwise intractable combined seizure types. It may be prescribed either in the liquid form, as the tincture, in doses of 5 or 10 minims, or in the form of a pill made of the extract or pulvis belladonnae. The zinc salts (oxide, valerianate, and lactate) are old established, and were occasionally successful remedies in the hands of the French physicians. Opium, as a remedy for epilepsy, dates from classical times. It is now only used in the opium bromide method recommended by Flechsig.[7] My experience of the treatment has not been such as to encourage further trial. Strychnine has been recommended from time to time, and used with considerable success by some physicians. In doses of gr. $\frac{1}{16}$ daily, it may be continued over considerable periods. Its *modus operandi* is probably merely as a nerve tonic, although it may have some influence in strengthening the tone of the vasomotor centres. Strychnine finds its most useful application in the treatment of nocturnal epilepsy, especially when there is reason to suppose that the blood pressure is materially lowered. Monobromate of camphor, eosinate of sodium, chloretone, and numerous other remedies have been tried, but without any special benefit. I have seen no particular advantage obtained by the use of bromipin, bromaline, and bromocarpine.

The Calcium Salts.

Recent examinations into the coagulation of the blood in epileptics have led to the suggestion that the salts of calcium may be of use in arresting or diminishing the frequency of epileptic seizures. As already shown, however, considerable discrepancy exists as to whether the blood in epilepsy coagulates more readily during a fit period. A more rapid coagulability during the four-and-twenty hours preceding a major seizure or serial attacks has been demonstrated (to my mind conclusively) by Dr. John Turner[8]; on the other hand, the observations of C. Besta[9] showed a diminished rate of coagulation, the fits apparently exerting no influence upon this. Donath[10] prescribed chloride of calcium to a limited number of epileptics without materially affecting the number of the fits. I have myself prescribed the lactate of calcium in 10 grain doses in combination with bromide of potassium in a few cases with very satisfactory results, and Dr. Littlejohn[11] reports a case in which calcium lactate alone was prescribed with much benefit. It would therefore appear that the salts of calcium, which physiologically increase the coagulation of the blood, are worthy of further study in the treatment of epilepsy. It is not unlikely that the special type of the disease most suitable for treatment by these salts has yet to be defined, as it is obvious that all fits are not associated with increased blood coagulation.

DURATION OF TREATMENT.

The question as to how long bromide or any other form of medicinal treatment should be maintained is not one upon which any rigid statement can be made. Some authorities maintain that treatment should be continuous for a period of at least two years after the last seizure, but our experience at the Queen Square Hospital points to a much longer period as necessary. Epileptics attend there for many years after the arrest of the fits, as they find that stopping the bromide, even for a short time, conduces to a return of giddiness or of "sensations" reminding them of their previous attacks. If nine years' freedom from fits is to be a gauge of a "cure" of epilepsy, then withdrawing the bromide under a period of five years in those in whom the fits are arrested would be injudicious. On the other hand, many persons in whom the disease has been arrested after a year or two of bromide treatment remain free from attacks without the aid of any medicinal remedy. The important practical point in this connexion is that those patients who take bromide well and in whom the fits are thereby kept in subjection ought to persevere with the remedy, and not to stop it. It is just when the fits have been satisfactorily controlled that further treatment is of most use. The withdrawal of medicinal treatment in those in whom the fits have been

arrested should be carried out gradually. Under no circumstances should bromides be withdrawn suddenly after their prolonged use.

MISCELLANEOUS METHODS OF TREATMENT.

It may be useful to refer to some of them in this place, as a case which has resisted one form of treatment may react for a time satisfactorily to another. It should, on the other hand, not be forgotten, what is a well-recognized axiom in the management of epilepsy, that cases of this disease may respond favourably for a time to each and every change of treatment, medicinal or other, and even when active treatment is stopped. As the disease is characterized by spontaneous remissions in the frequency and severity of the seizures, a favourable result may occur, not on account of, but in spite of, therapeutic or other measures.

Of all the recent systems, that which seemed likely to be of most use was the introduction of the organic extracts in the treatment of this disease; but further experience with these preparations has been on the whole disappointing.

Organotherapy.—The administration of extract of the thyroid gland, or of iodothyrin, was at one time strongly advocated, more with a view to counteract the coexistent mental deterioration than as a subduer of convulsions. In a number of cases of confirmed epilepsy, in which preparations of the thyroid gland were given over considerable periods, no appreciable diminution was detected in the frequency of the seizures, and in only a limited number of cases, and for brief periods, was there any lessening of the coexistent dementia. My experience is that thyroid medication tends rather to increase the number of fits, and to produce at times irritability and want of control. Preparations of the thymus gland act injuriously in epileptics by increasing the number of the seizures. Cerebrin has not been found to be of any value.

Serotherapy.—The treatment of epilepsy by the injections of blood serum, either from another epileptic or by reinjection of the blood serum into the same epileptic, was introduced by Ceni,[12] who believed that a soluble epileptogenous poison existed in the blood serum in quantities varying with the severity of the disease. Ceni's view differed from that held by most supporters of the autotoxic theory of convulsions in that the amount of poison circulating in the blood did not change in the different stages of the disease. As the result of a number of observations, Ceni concluded that there exists in the blood of epileptics a soluble latent biochemical substance, an autocytotoxin, which has an influence over the elaboration of epileptogenic toxic agents, and produces its results after repeated injections. The records of these observations show that in some cases a beneficial, and in others an unfavourable, result followed the injection of the blood serum of epileptics into other epileptics. The practical utility of this method in the treatment of epileptic fits has not, even in the hands of its originator, proved sufficiently satisfactory as to render its application general; while later investigations, more particularly those of Sala and Rossi,[13] Gerharz,[14] and others, failed to confirm Ceni's results or to establish any benefit at all from the injection of the blood serum of epileptics into others subject to epilepsy.

TREATMENT OF THE FITS.

To Arrest the Fit.

The first consideration may be given to the question as to whether it is possible to arrest an attack once the warning has commenced. Many methods have been suggested for this purpose, some of which are of old standing and date from the time of Galen. The attacks in which abortive measures are likely to be successful are those commencing with a peripheral aura. The common method of encircling the wrist, for example, with a ligature or tape, and making traction upon it as soon as the aura is felt in the hand, is well known. As great force is sometimes required to arrest the attack, a strap is preferable to a tape or ligature. Sometimes the patient alone is unable to produce sufficient compression, and requires the assistance of a second person. A circular blister was suggested by Buzzard,[15] in order to induce a more permanent effect, sometimes with advantage.

Forced extension or movement in the direction opposite to the warning sensation may be efficacious when compression alone is unsatisfactory. According to Herpin,[16] the most effectual means of arresting such attacks is a combination of circular compression and forced movement in the opposite direction. Friction, or rubbing the extremity of the limb where the sensation starts, has also been of use; and I have known a patient to bite the finger in which the aura commenced, sometimes with a successful issue.

Abortive means are less satisfactory in cases with a visceral aura. Strong pressure by the hands over the epigastrium is resorted to by some epileptics, while others prefer to drink cold water; swallowing a few drops of ether has also occasionally resulted in arresting an attack. Inhalations of ammonia have been used successfully. Other patients refer to a method of auto suggestion, bringing to bear a strong determination to overcome the attack—a method which undoubtedly has been followed by success in some cases.

The inhalation of nitrite of amyl is a method of arrest more especially valuable in fits with cephalic warning, and particularly in those with olfactory sensations (Gowers). Pierce Clark has insisted upon this remedy as a satisfactory means of aborting fits.

Status Epilepticus.

It has been shown that a gradually increasing number of seizures is the usual sign of the onset of the status epilepticus or of prolonged serial outbursts. With this warning the dose of bromide should be increased even up to double the quantity, and chloral (10 to 15 grains) should be added, and the mixture repeated every four hours. Clark recommends the addition of a solution of morphine to the draught.

Should the fits be recurring with great frequency and severity, no remedy is of greater benefit than the inhalation of chloroform given up to complete anaesthesia. On the other hand, in less severe types of status, or in serial epilepsy, a combination of a bromide salt (gr. xx) and chloral hydrate (gr. x) may be repeated frequently (about every two or three hours) for a time with benefit, especially in the latter condition.

The bromides given alone are of little avail, but within recent years their hypodermic administration in sterile solutions of not more than 10 per cent. (Clark) has been recommended. These may be repeated until 60 or 100 gr. have been injected.

Injection of the bromides by means of *lumbar puncture*[17] has also been advised, in sterile solutions of 30 gr. to the ounce, 10 or 15 c.cm. of the cerebro-spinal fluid being withdrawn before 10 c.cm. of the bromide solution are injected. The hydrobromate of hyoscine has also been used occasionally with success (gr. $\frac{1}{75}$ to $\frac{1}{100}$ hypodermically).

In the post-convulsive, stuporous stage of status epilepticus the treatment is that of acute dementia—strychnine, digitalis, and alcohol, if there is much cardiac debility. Abundance of nutritious food and careful nursing are essential features in the general management of this period.

Acute Dementia.

During the after-stage of exhaustion following upon ordinary seizures no special treatment is necessary, as the stage passes into that of sleep, from which the patient spontaneously recovers. In the acute dementias following serial or status outbursts, on the other hand, great care and attention is required, the patient having to be nursed as one suffering from acute illness. It is during this stage that death may occur, a circumstance which is as frequently attributable to want of attention as to the clinical condition. During the few days of stupor abundant and nourishing liquid diet, in the form of milk, eggs, and custards, should be frequently given. If the patient is unable to swallow, nourishment should be administered in the form of nutrient enemata. Hypodermic injections of strychnine (liq. strych. m v, or strych. sulph. gr. $\frac{1}{30}$) may require to be frequently administered.

If necessary, alcohol may be given in considerable doses, and the action of the heart steadied and maintained by digitalis or strophanthus. Later on, during the delusional stage, general attention and care is all that is usually needed, while later tonics may be prescribed with advantage.

Acute Mania.

As already described, this form of excitement, whether occurring as a post-paroxysmal phenomenon or as a psychical equivalent, is characterized by the suddenness of its onset, the intensity and violence of its manifestations, and the shortness of its duration, extending usually over a few hours. All that is therefore required lies in protecting the patient, and those attending him, from the effects of the violence and excitement. For this purpose resort may be had to several attendants, or, if a drug be considered advisable, I know of none more safe to administer, or more speedy, certain, and satisfactory in its action, than the hydrobromate of hyoscine in doses of $\frac{1}{75}$ to $\frac{1}{50}$ grain, injected hypodermically. One injection is usually sufficient to induce quiet and repose for a period of several hours.

DIETETIC TREATMENT.

In all cases of recent epilepsy, whatever may be the medicinal treatment adopted, some modification of the diet from that of a person in normal health is desirable.

In the treatment of this disease the primary object is to keep the dose of the bromide salts as small as possible, because, owing to the protracted nature of the malady, a prolonged course of bromide medication is necessary, particularly in those cases in which treatment is most effective. Therefore, any dietetic modification which will permit of this being accomplished is of advantage.

As already pointed out in the first lecture, many causes have been assigned as the immediate excitant of epileptic seizures, but the only certain factor is the unstable condition and proneness to "discharge" of the cortical nerve cells in predisposed persons. In any attempt to formulate the principle which ought to guide the physician in considering the dietetic treatment, there ought to be kept in mind that nervous energy has its source chiefly in the albuminous and nitrogenized principles of foodstuffs.

Merson[18] treated a number of epileptics upon farinaceous and nitrogenous diet alternately over a stated period, and noted the number of the seizures. The results of the treatment were not such as to justify the conclusion that either kind of diet possessed any decided advantage over the other in the treatment of epilepsy. The experience of Alt[19] upon the several forms of diet in epilepsy led him to the conclusion that a diet without meat was the more satisfactory, but that neither a milk diet alone nor a vegetable diet was as beneficial as their combination. It was an old speculation of Hughlings Jackson that the part played by salts and minerals should be investigated in their relation to the building up of structure and the development of function. As the chlorides and the bromides were strikingly homologous in their chemical and physical properties, he suggested that the efficacy of the bromide salts might be due to their replacing with greater energy the more common chloride salts in the blood and tissues of the body. The practical application of this suggestion, however, was not carried out in the treatment of epilepsy until Toulouse and Richet[20] recommended a diet in which the total daily quantity of sodium chloride was limited to one or two grams. It was thought that by diminishing the quantity of the ingested chlorides, mainly in the form of sodium chloride, or common salt, the bromides might be administered in smaller doses, and the risks of bromidism thereby lessened. Hoppe[21] has shown that one-third of the chlorine of the blood serum has to be replaced by an equivalent amount of bromine before any therapeutic result is obtained. When more than this is replaced, bromide intoxication may occur. When less chloride is ingested, saturation takes place sooner. It has been shown that with a diet free from salt saturation takes place in from three to four days. This methed of "salt starvation" in the treatment of epilepsy has been extensively tested, with varying results.

In some cases "salt starvation" has proved a useful adjuvant to bromide medication, while in others little benefit has resulted. Other observers have shown that the dietary is of especial value in cases requiring large doses of the bromides, and in those which show a ready tendency to bromide intoxication. My own experience of the method has been such that, when used in combination with a purin-free dietary, very substantial benefit is derived, and relatively small doses of the bromides may be prescribed. A "purin-free" diet is made up of those foodstuffs in which the "purin" or alloxur bodies are absent, or present only in such small quantities as to be negligible.

Purin bodies exist in all forms of meat extract, in both the white and the red meats, commonly used as food. They are present in large quantities in such substances as sweetbread, liver, and beef steak. They are not present in milk, eggs, bread, butter, cheese, the farinacea, most fruits, some vegetables, and honey. They exist to only a moderate degree in most forms of fish, peas, beans, lentils, tea, coffee, and oatmeal. I append a dietary which will be found of use to those desirous of giving the treatment a trial.

Diet Table.

Milk (fresh, soured, butter-milk, or whey).
Eggs (boiled, poached, scrambled, or raw).
White bread and butter, cheese, macaroni, rice, tapioca, semolina, vermicelli.
Suet puddings with currants, jam and treacle, apple dumplings.
Pastries, pancakes, jellies, tea-cakes.
All vegetables.
All fruit.
Of beverages, weak infusion of China tea is the best.

I have used this diet, or a modification of it, containing, according to the needs of individual cases, a small portion of white fish, either once daily or three times a week, for several years, in conjunction with the bromides or Gélineau's *dragées*. The results have been such that I am led to advise it in all cases of recent epilepsy.

1. In cases in which the bromides alone have been of little or no use, the adoption of the purin-free, saltless diet has at once led to material improvement.
2. By its aid the dose of the bromides has been largely reduced, and it is in cases refractory to relief by bromides that some physicians increase the salts to such an extent that bromism is brought about and maintained.
3. If properly supervised, the symptoms of bromism need never appear.
4. If the patient shows any signs of loss of weight, the addition of cream or cod-liver oil is usually sufficient. If not sufficient, it is advisable to permit fish, or even a little lamb or mutton.

CONFIRMED EPILEPSY.

In cases of confirmed epilepsy with mental deterioration the use of the bromides is of relatively little value. According to Féré, the bromides are only of use when the dose is so large as to produce toxic effects. Their continued administration in these cases does, however, produce a diminution in the number, and perhaps in the severity, of the seizures. With a view to test the efficiency or otherwise of a 30-grain dose of bromide salt administered every evening to a number of confirmed epileptics in an institution, the dose was stopped for one month, and the total number of fits with or without bromide was compared. During this period the fits were increased in frequency by about one-third (278 to 402).

It was long ago pointed out by Esquirol that any change of treatment was temporarily beneficial. Bringing epileptics under the generally favourable hygienic surroundings of a hospital will often conduce to material temporary improvement without the aid of any medicinal remedies. As with medicinal treatment so with dietetic modifications: I have not seen any material benefit obtained in cases of confirmed epilepsy by aid of the salt-free or purin-free diets. The majority of the cases feel better when on the purin-free diet, but there is no marked improvement in the frequency or severity of the seizures, except perhaps in those cases in which the fits occur in series. These observations would bear out what has been constantly noted in the treatment of epilepsy—namely, that in the confirmed disease with mental impairment little, if any, benefit is derived from treatment, either medicinal or dietetic. In other words, those cases in which the disease has become established upon an organic foundation require to be lodged preferably in an institution for epileptics, where they may be prescribed (1) regular and congenial employment, (2) a judicious alternation of work and play, and (3) a suitably arranged and simple mode of life, with avoidance of excitement and abstinence from alcoholic liquors.

REFERENCES.

[1] Celsus, *On Medicine*, Dr. Greive's translation, Bk. III, chap. xxiii, p. 168. [2] Sieveking, *On Epilepsy*, London, 1858, p. 229. [3] Locock, *Med.-Chir. Trans.*, 1857. [4] Clouston, *Journ. of Mental Science*, 1868. [5] Laudenheimer, quoted by Binswanger. [6] Gélineau, *Traité des épilepsies*, Paris, 1901. [7] Flechsig, *Neurol. Centralbl.*, 1893, p. 229. [8] John Turner, *Journ. of Mental Science*, October, 1908. [9] Besta, *Riforma Medica*, 1906, N. 43

[10] Donath, *Epilepsia*, 1909. [11] Littlejohn, *Lancet*, 1909, i, p. 1382. [12] Ceni, *Riv. Sperimental di Freniatria*, 1901, p. 344; and *Neurol. Centralbl.*, 1903, p. 388. [13] Sala and Rossi, *Neurol. Centralbl.*, 1903, p. 852. [14] Gerbarz, *Neurol. Centralbl.*, 1904, p. 835. [15] Buzzard, *Brain*, vol. iii, p. 554. [16] Herpin, *Accès incomplet*, 1867, p. 29. [17] Morton, *Trans. Nat. Society*, U.S.A., vol. iii, p. 42 [18] Merson, West Riding Asylum Reports, 1875, vol. v. [19] Alt, *Zeitschr. f. klin. Med.*, vol. liii. [20] Toulouse and Richet, *Acad. des Sciences*, 20, xi. [21] Hoppe, *Neurol. Centralbl.*, 1905, p. 993.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SEVERE TRAUMATIC *ANTE-PARTUM* HAEMORRHAGE.

THE case of *ante-partum* haemorrhage published by Drs. Purslow and Branson[1] reminds me of one which occurred in my practice a few years ago. Not having the notes at hand I can only give my recollections.

I was called late one evening to a house in the bazar where a woman was said to be bleeding to death. I found the patient, who was almost at full term, lying on the floor in a pool of blood, blanched, and with a very small pulse. I checked the bleeding by hot vaginal douching preparatory to examination, but as the haemorrhage showed no tendency to recur, I then devoted my attention to restoration of the patient. I also ascertained that she was not in labour, as I had been led to suppose, but that she had fallen on to a brass cooking vessel, and haemorrhage had commenced immediately. Further examination revealed a small deep wound at the base of the clitoris. The pulse, which had become imperceptible, having been restored, and no further haemorrhage having occurred, I decided to allow the patient to recover further before treating the wound. I therefore left directions that I should be called at once if any bleeding occurred. As the house was near the hospital I considered this fairly safe. I prepared sutures, etc., expecting to be called up during the night. The next morning I was hastily summoned, as bleeding had recurred. The patient's condition had improved, and I was able to control the bleeding by one or two catgut sutures. My examination of the parts was not very complete owing to deficiencies of light and other drawbacks, and I cannot say whether the vessels were varicose. I did not see the patient again, although she remained for some days under treatment. I was told that she was delivered of a healthy child about a fortnight later. In this case, although the bleeding was profuse, the child was apparently unharmed. Possibly the treatment by injection of saline solution into the cellular tissues, which was carried out soon after the haemorrhage occurred, was instrumental in saving the child.

Nasik, India. E. N. LEA-WILSON, L.R.C.P. and S.Edin.

NOURISHMENT IN ACUTE DISEASES.

THE wail, "If he does not take any food he will soon lose all his strength," is so often heard from persons in attendance on the sick, that one is tempted to ask if we are on the right lines in almost forcing food on people suffering from acute complaints, or whether it would be better to leave them to Nature—that is, to wait until food is asked for. It is quite a common experience to find a patient out of bed for the first time for not more than a quarter of an hour quite depressed, and sometimes in tears, because of the unexpected weakness, and this after a great deal more nutriment has been taken than often happens when in normal health. Physiologically we do not draw our strength from our food; surely the whole of that goes to make good the loss of waste tissue which is always going on in the human economy, dead tissue is constantly being thrown off, and new cells are born and go to make good this loss; hence the popular saying that "we have a new body every seven years." This, I believe, is true, with this exception: that the body is being renewed every day so slowly we are not cognizant of the change, whereas popular rumour credits the transformation with more expeditious methods.

Where, then, does our strength come from? In my opinion, we get this from the exercise we do: a postman's legs are well developed and strong because of the work they do; so with the blacksmith's arms. Of what avail, then, the nutriment in all its varied, alluring, and advertised forms if we do not get any strength from its ingestion? None, I say, except to build up the burnt-out tissues the result of an acute attack of, say, pneumonia; but with a temperature of 104° F., furred, foul tongue, anorexia, constipation, loading up of the bowels with accumulated waste and innumerable micro-organisms of infinite variety and infection, surely it were better to wait for convalescence, with its rested and recuperated stomach, its bowels cleared of accumulations, and a rested mind free from the terrors of delirium. What, then, should be our policy, if not one of feeding? Watch the pulse, and improve this by increasing the blood pressure by means of copious draughts of hot water or saline injections by the rectum, or both, and we shall not need to fear collapse or heart failure.

Darwen. F. G. HAWORTH, M.B., D.P.H.

[1] BRITISH MEDICAL JOURNAL, February 5th, 1910, p. 319.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

YORKSHIRE BRANCH.

Wakefield, Wednesday, March 16th, 1910.

Dr. GODFREY, President, in the Chair.

Vaccine Therapy.

DR. MCLEOD VEITCH (Harrogate) read a paper entitled, Some Remarks on Vaccine Therapy with Reference to Cases. The object of the paper was to show that vaccine therapy, since its introduction, had made very great progress, and whereas, in the first instance, its application had been almost entirely limited to the treatment of staphylococcal infections, it was now applicable in almost every variety of bacterial infection. In support of this statement, a number of cases which had been personally treated by means of vaccine inoculations were cited. These cases comprised:

(1) Case of staphylococcal infection of three years' duration: Four inoculations given; duration of treatment, three weeks; result, cure; no recurrence after one year. (2) Case of well marked pustular acne vulgaris: Six inoculations given; duration of treatment, two months; result, cure; no relapse one year later. (3) Case of lupus erythematosus complicated by mild acne vulgaris: Four inoculations of acne vaccine and six of tubercle vaccine given; duration of treatment, four months; result, cure; no recurrence eight months later. (4) Case of genito-urinary tuberculosis complicated by bacilluria: Twelve doses of tubercle vaccine and seven of bacillary vaccine given; duration of treatment, four months; result, gain of 2 st. in weight, all subjective symptoms disappeared, urine became quite clear and free from pus, no tubercle bacilli discoverable, other bacilli also disappeared; one year later, no recurrence. (5) Case of acute gonorrhoea: Three inoculations of gonococcal vaccine given; duration of treatment six weeks; result, complete cure; there was no gleet after cessation of treatment, although with two previous attacks the same patient had been troubled with gleet for some months after cessation of ordinary injection treatment. (6) Case of bacilluria due to *B. coli* infection of bladder: Three inoculations of *B. coli* vaccine given at ten-day intervals; result, complete cure. (7) Case of subacute rheumatic fever: Attack had persisted for several months, with frequent relapses; before inoculation had been confined to bed practically entirely for five weeks; all the joints affected at different times; no improvement, in spite of vigorous treatment with salicylates and aspirin; vaccine of *Micrococcus rheumaticus* and polyvalent *Streptococcus* used in this case; after the first inoculation the temperature fell to normal, and never again rose; all acute symptoms had disappeared after the second inoculation; subsequently other three inoculations were given for various chronic rheumatic pains which had persisted, and after the last of these inoculations the patient was perfectly well and free from all pain; has remained so for four months. Several other cases of chronic rheumatism were mentioned in which equally satisfactory results were obtained by treatment with a similar vaccine; also a case of sciatica was referred to. (8) Case of acute neuritis of upper arm: One dose of mixed *Micrococcus rheumaticus* and *Streptococcus* vaccine given; result, pain had entirely disappeared at the end of one week; in previous attacks pain had invariably persisted for several weeks. (9) Case of pneumococcal infection, broncho-pneumonia, and pericarditis following influenza: Pneumococcal vaccine injected, with almost immediate result; temperature fell to normal in twenty-four hours, and lung and pericardial conditions cleared up within a week; subsequently there was a relapse, and pericardial friction and temperature again developed; a second inoculation of the same vaccine was given, and in twenty-four hours the temperature was normal, friction had completely disappeared, and the patient made a rapid and uninterrupted recovery.

In conclusion, the great importance and wide application of vaccine therapy was emphasized, and a strong appeal made for its more frequent employment. It was stated that wherever possible autogenous vaccines should be prepared for individual cases. Successful results were entirely dependent on the careful study of each case on its own individual merits, and in the present state of our knowledge it was thought advisable that vaccine therapy should only be resorted to after very careful studying the whole subject, or failing that, under the personal direction of some one who had done so.

Treatment of Chorea Gravidarum.

Dr. E. O. CROFT (Leeds) read a paper in which he emphasized the great importance of providing suitable accommodation in hospitals for the observation and treatment of the diseases associated with pregnancy. In general hospitals such cases were often treated in the medical wards, but, owing to the absence of lying-in wards, patients advanced in pregnancy were not catered for. In the lying-in hospitals, on the other hand, no special provision was often made for pre-maternity cases. Dr. Ballantyne's urgent appeal on behalf of these patients was quoted. Now a few of the general hospitals in London were providing lying-in wards. At the Hospital for Women (Gynaecological) and Children at Leeds, when rebuilt six years ago, a small isolated maternity department was specially equipped, and hence women suffering from pregnancy disease were provided for at any period of gestation. Many such cases were therefore admitted. During the last few years Dr. Croft had treated in hospital 12 cases of chorea gravidarum, and he gave particulars of the series, specially referring to the question of terminating the pregnancy. His experience of these recent cases was decidedly adverse to the induction of abortion or premature labour. He quoted the striking results of a series of cases reported by Dr. Fletcher Shaw, of Manchester, in the *Journal of Obstetrics and Gynaecology of the British Empire*, 1907–8. These cases were treated on the theory of the disease being associated with a toxaemia, and excellent results followed a system of eliminative treatment, the use of narcotics and the termination of pregnancy being avoided. Of Dr. Croft's 12 cases, 2 were under treatment at the present time and were improving, but were not sufficiently advanced for quoting.

In Case I, an earlier case, abortion was induced at the sixth month of the second pregnancy, and the chorea did not clear up for several weeks. This patient had a further attack of chorea during her sixth pregnancy. It was a mild case, and was satisfactorily treated on the usual lines with arsenic, etc. The pregnancy went to term. The result of the treatment of the second attack suggests that the abortion on the first occasion had been unnecessary.

Case II. A severe case, complicated with rise of temperature, rheumatic pains, and cardiac disturbance. The treatment was traditional—iron, arsenic, chloral, salicylates, etc. Spontaneous abortion. There was no improvement apparently after the abortion, and the patient was in bed three months under treatment before convalescence.

Cases III to X inclusive were treated on lines of toxaemic elimination, and five of these may be classed as severe cases, with delirium, delusions, severe restlessness, and the other symptoms. In none of these was abortion induced, and all proceeded to full term after cure of the disease, and were delivered of living children.

All the patients being treated in hospital, the general conditions were fairly identical. The patient was usually isolated, always if very restless, and sometimes kept in a darkened room. The diet was strictly limited to milk and diluents at first. The bowels were cleared by calomel or jalap, and kept free by salines. Diuretic and diaphoretic mixtures were given. No arsenic or tonics were given until convalescence was established. Narcotics and sedatives were avoided as a routine, and only resorted to very occasionally. Morphine was specially forbidden owing to its tendency to check excretion. It was noticed that improvement sometimes occurred rather suddenly—a full night's sleep being the turning point. The estimation of the amount of urine and urea was difficult to determine owing to the impossibility of collecting the whole amount and also to the catharsis, but it was clinically noted that with improvement there was increased diuresis. The chief results to be noted were that of the ten cases not one mother died, and in eight of these the disease was cured without interruption of pregnancy and with the consequent saving of so many infant lives. In Case I the fetus could have been saved, and possibly in Case II, although in that case the disease had been of a rather severe type for two months before admission.

Treatment of the Puerperal Septic Infections.

Dr. OLDFIELD read a paper on this subject. Preventive measures were briefly referred to: the value of abdominal palpation to supplement or even to supplant vaginal examinations, the use of rubber gloves being emphasized, and also prophylactic doses of antistreptococcic serum in cases where frequent examinations have to be made, in operative cases, and in long labours from any cause. The curative treatment by serums, vaccines, and operative measures received most attention, but some items in general treatment were mentioned. In these forms of sepsis, as in so many others, the propped-up position for better drainage and the giving of large quantities of water by mouth, rectum, and subcutaneously were most useful. Quinine, he thought, was overvalued, but ergot in large doses seemed to do good in the early stages of the disease. With regard to specific treatment by vaccines and serums, the former had disappointed him, but from the latter much could be expected if used intelligently. They should be given in large doses, 50 c.cm., repeated not more than twice, and early in the course of the disease. When an abscess had formed serum was dangerous. The writer described a case he had successfully operated upon, and spoke hopefully of the operation when done in selected cases. In the treatment of this disease, while suitable local treatment was of great value, the best results came from supporting the natural defensive processes, and over-doctoring and over-nursing should be guarded against. At the same time a careful and continuous look-out should be established for local lesions, for in the prompt treatment of these good results usually follow. Puerperal septic infections constituted a large class of diseases, and to obtain success in their treatment a complete diagnosis of lesion and of organism was of prime importance. Of the various forms of local treatment, drainage, he said, held the first place, promoted at first by the propped-up position, and assisted by giving of ergot and hot vaginal douches; it should be definitely ensured, in cases where the above measures were not successful, by inserting a drainage tube into the uterus, a malleable metal one being the best. Curettage, though often adopted, and sometimes useful, was a risky proceeding, and, in the later stages of the disease, harmful. Digital exploration with gloves, and after thorough cleansing of vulva and vagina, could be done with little or no risk, and sometimes resulted in removal of the cause of sepsis. This treatment was particularly indicated when the lochia became offensive, and when retention of secundines or clots was suspected. Uterine douching with saline solution might be tried for a few days when the lesion was uterine, and did not extend beyond the uterus. Intravenous injection of collargol and mercuric chloride was useful in the early stages of bacteriaemia. Operative procedures, such as posterior colpotomy, hysterectomy, and ligature of veins, were considered. They offered better chances than expectant treatment in special cases with definite indications. Posterior colpotomy was called for in those rare cases where pus collected in Douglas's pouch, and in general peritonitis; it seemed to do good in some cases of streptococcic metritis. Hysterectomy rarely did any good, except in suppurating myomata, uterine abscess, and uterine perforation. Ligature of veins in chronic puerperal pyaemia gave the patient much the best chance. It was harmful in acute cases. When both sides were thrombosed, the ovarian and internal iliac veins should be ligatured; the ovarian and common iliac when thrombosis was confined to one side.

THE Paris Academy of Medicine has appointed a commission consisting of eleven members to study the question of antityphoid inoculation.

THE Royal Mail Steam Packet Company is arranging special cruises to Spain, Portugal, Morocco, the Canary Islands, Madeira, and the Azores, for Whitsuntide holiday makers.

A BILL to protect the public morals by prohibiting advertisements "of or concerning any means, device, or method for the treatment, cure, alleviation, or prevention of any venereal, sexual, or menstrual disease, weakness, or condition," has been introduced into the Ohio State Legislature.

Reports of Societies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Section of Surgery.

Friday, March 11th, 1910.

Mr. Henry Stokes in the Chair.

Thrombosis of the Lateral Sinus.

Mr. O. Gogarty described a case in which he had resected the jugular vein on account of thrombosis of the lateral sinus. He reported this case in order to show the importance of considering disease of the middle ear in the diagnosis of obscure cases. The patient had been diagnosed as suffering from gastric disturbance when vomiting was marked, and later from stone in the kidney, when great haematuria occurred, and did not seek admission to hospital until the disease had been present for six days. The temperature on two occasions had been 105°, and rigors had occurred before admission. The prominent feature of the case was the total absence of localizing signs. Oedema over the mastoid, Greisinger's sign, tenderness over the jugular cord, and stiffness of the neck were missing; though the presence of pyaemia made the case all but hopeless, it was decided to give the very slender chance of recovery by operation. A clot nearly 2 in. in length was removed from the lateral sinus after a considerable portion of the internal jugular vein had been resected. The patient lived only two days, dying of pyaemia, with a rash and well-marked jaundice.

Dr. Dempsey said they should be grateful to the exhibitor for showing a case which was not an operative success. Lateral sinus thrombosis was much more commonly met with since the radical mastoid operation had come into vogue. The great difficulty was the question of diagnosis in certain cases, and in dealing with such he thought they should be guided by what they met with when treating the case. He had seen a case, in which the diagnosis was typhoid fever, that developed some discharge from the ears. He cut down on the mastoid, and found extensive bone disease. He did the ordinary operation, and the patient was much better for several days. Then came a temperature of 105° and sharp rigor, suggesting lateral sinus disease. He reopened, but found things as at first. The same symptoms recurred for three weeks about four times a week, but further operation was refused, and yet the patient got steadily well, and was now in perfect health. In another case, in which the radical mastoid operation was performed, the patient also developed a high temperature and rigor. The lateral sinus was exposed, and showed a surface greyish, and breaking down, with the emission of pus. The jugular vein was tied in the neck, and the sinus freely opened with free haemorrhage. The patient died, and the trouble was found to be a cerebellar abscess. If one met with a vein clotted down in the neck, it should be cut down on and the vein excised; but if one found the sinus filled with clot in the region of the mastoid, the question arose as to whether the internal jugular should be tied at all or not. Opinions were about equally divided. Cases in which it was not tied had done just as well as if the ligature had been effected. But the test was hardly a fair one, as the cases of tying were practically desperate cases which were given a last chance.

Dr. Harvey sympathized with Mr. Gogarty in his endeavour to save the patient's life. The procedure adopted was very wise, and he would like to know what were the indications as to when the internal jugular should be opened.

Mr. W. S. Haughton said it was from such cases very often that they learnt most. He had operated on five cases of suspected thrombosis, in three of which the condition was found and death followed. In the other cases there was no apparent thrombosis, and death followed. He did not ligature the internal jugular, but he was inclined to think it should be done oftener than it had been done. In a case which was not septic he adopted a trephine opening, and cut into the lateral sinus. Severe haemorrhage followed, and he was obliged to plug. Six days later he reopened and removed the plug, and no haemorrhage followed. He had, however, given up the trephine, as he found the broad gouge did the work more safely.

Mr. Wm. Taylor said he had seen the swelling which was found along the jugular vein to be due, not to an infection of the vein, or thickening, or clot, but to be an infection of the glands. Where they could easily recognize on palpation the cord-like swelling described in the books, it was too late; but there was one chance in five hundred which should be given to the patient. Where there was the smallest suspicion of any intracranial complication, operative interference should be undertaken at an early stage. In the combination of two intracranial complications due to ear disease, the difficulty of diagnosis was greatest, and he believed that septic sinus infection predominated. He had seen a case in which the phenomena of cerebellar trouble did not manifest themselves until some twenty-four or thirty-six hours after the lateral sinus had been opened. Cases of sinus infection, where there was not a clot, were, he felt, far more dangerous than those in which there was, and he would be inclined to ligature the jugular, even though the infection might be carried by other channels. He would have no hesitation in doing so where there was clear evidence that the sinus was infected; where there was a doubt he would expose the mastoid and the lateral sinus, and deal with the condition as he found it.

Dr. Pearson asked what were the indications for operating on obvious ear cases, where pus was found under tension in the mastoid without any definite evidence of other complication at the time. He recalled a case in which the radical mastoid operation was done. After the operation the patient appeared to be very well, but the temperature rose later to 103°, and a blood count showed a marked leucocytosis. The patient became very dull, and answered questions slowly, but there were no other symptoms. The wound was reopened, and a large temporo-sphenoidal abscess was found with pus under very high tension. He felt certain the abscess was present at the first operation, but that it had passed the stage at which it gave the symptoms they were on the look-out for.

Mr. Gogarty, in reply, referred to the question as to when the jugular vein should be resected in the case of thrombosis of the lateral sinus. In his opinion, although he knew that many thrombi had been successfully removed without ligaturing or resecting the vein beforehand, it was better to ligature the vein if it was decided to open the sinus when the middle ear was diseased; and to resect the vein in cases of thrombosis of the jugular bulb, or whenever it seemed probable that the vessel wall might be itself a carrier of infection.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

Tuesday, March 15th, 1910.

Dr. Ward-Smith in the Chair.

The Action of Hypnotics.

Dr. Campbell, in a paper on hypnotics, said that the most rational theory regarding the cause of natural sleep was that the processes of the nerve cells of the higher centres retracted, so that their arborization separated and formed a series of blocks to the ready passage of impulses. Hypnotics he divided into three groups, according to their mode of action: (1) Bromides, (2) chloral, sulphones and urethanes, (3) opium and its allies. (1) *Bromides* acted in two ways: (*a*) as salines raising the specific gravity of the blood, and causing a rise in blood pressure and diuresis; (*b*) as a depressant to the cells of the central nervous system. Bromides were chiefly of value in cases likely to be prolonged, and where there was not likely to be any great call upon the brain for mental activity. (2) *Chloral, sulphones and urethanes* had certain points in common: (*a*) Power of diffusion into the uninjured cells of the living tissue; (*b*) comparative insolubility in water; (*c*) solubility in fat-like compounds such as brain lipoid; (*d*) they do not act upon the nerve cells; and (*e*) their physiological action had some relationship to their chemical constitution. (3) *Opiates* depressed the sensory nerve cells in the higher centres and also the nerve cells in the sympathetic ganglia.

LIVERPOOL MEDICAL INSTITUTION.

Thursday, March 31st, 1910.

Mr. GEORGE NEWBOLT in the Chair.

Cerebro-spinal Rhinorrhoea.

Dr. J. MCDOUGALL showed a man aged 31 whose illness commenced at the age of 17 with convulsive movements of the right arm and leg, with loss of consciousness. He had also severe frontal headache. Some six years later a discharge of fluid from the nose began and persisted for two years. The present discharge had continued for eighteen months. It continued day and night, and averaged a little over a pint in the twenty-four hours. The nasal cavity was normal. The fluid gave the ordinary reactions of cerebro-spinal fluid. Dr. T. R. GLYNN referred to a case of cerebro-spinal rhinorrhoea published by him in the BRITISH MEDICAL JOURNAL of April 22nd, 1905. The symptoms simulated those of intracranial tumour. Cerebral symptoms developed two months after a blow on the head, and resembled those of cerebellar tumour; in another twelve months the patient had become almost imbecile. Then the rhinorrhoea commenced, and he gradually recovered; the discharge ceased in a few months, and he now remained perfectly well.

The Virulence of Appendicitis.

Mr. R. W. MURRAY, in a paper on 151 cases of appendicitis operated on by him during the last three years, expressed an opinion that in the last twenty years the type of the disease had altered and that the outstanding features of appendicitis as met with to-day were (1) the increased frequency of the disease, (2) the increased virulence of the poison. As soon as the diagnosis of appendicitis had been established arrangements should be made for an operation to be performed; the trouble was thus confined to the appendix, and might be removed with the appendix. The risks attending an operation made under these conditions were known to be few, and those of delay to be many. Mr. RUSHTON PARKER said that in some cases the appendix when removed showed no outward sign of disease, but on slitting it up a stricture or other alteration was found. Though early operation had often been justified by the discovery of even gangrenous change, yet sometimes the refusal to submit to operation had been followed by complete recovery, and without recurrence. Again, symptoms of apparent recurrence due to adhesions, and the resulting tormina and griping sometimes justified waiting, which was rewarded by recovery. At operation signs of spontaneous recovery had been revealed, and amply explained the disappearance of large and indurated swellings, such as were commonly noted in preoperation days. Even disappearance of the appendix by partial or extensive atrophy had been thus observed, and might explain the impossibility of finding it during operation. Mr. DAMER HARRISSON also agreed in considering that the virulence of appendicitis was greater than formerly. Mr. JEANS had met with two cases in which he could not find the appendix. Dr. J. C. M. GIVEN mentioned two instances in which the patient was attacked with violent pains in the region of the appendix; both patients refused operation, and were perfectly well in thirty-six hours.

Traumatic Neurosis.

Dr. T. R. GLYNN, in a paper on the traumatic neuroses, limited the term to neurasthenia, hysteria, and hysteroneurasthenia. Predisposition from inheritance or habit was of great importance. Hystero-neurasthenia was the most common form in his experience. He described in some detail the symptoms of the several varieties, and laid stress upon the period of "premeditation" before the advent in full force of the neurasthenic symptoms. He contrasted the taciturn behaviour and gloomy appearance of the traumatic cases with the loquacity of the ordinary neurasthenic. The stigmata of hysteria were rarely if ever simulated. Dr. W. B. WARRINGTON alluded to the possible organic nature of the symptoms in some cases. He instanced especially the severe symptoms following injury to the head without fracture of the bones, and mentioned that these had in some cases been correlated with small multiple vascular lesions. He also alluded to the development of a true traumatic myelitis, the symptoms appearing some time after the injury and the lesion being of a very different nature to that of the ordinary system diseases. Mr. RUSHTON PARKER said that in cases of purely surgical interest malingering was common. Dr. ALBERT E. DAVIS said that, speaking from a large experience, traumatic neurasthenia was in his practice rare. He regarded these states as largely due to unconscious suggestion on the part of the medical attendant, and thought they were closely allied to malingering. He attached the greatest importance to a thorough examination of the mobility of the spine. When this was perfect, he was inclined to give a cheerful prognosis, and found that this was generally correct. Dr. ROBERT STEVENSON stated that in one firm where regular labour was employed and in which the custom was to continue the full wage with easy work during the disability from an injury, neurasthenia had been unknown in ten years, whereas in another, which employed casual labour and where the half-wage system and no work was adopted, neurasthenia was very common.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Friday, March 18th, 1910.

Dr. J. B. HELLIER, President, in the Chair.

The Action of Radium.

MR. A. S. GRÜNBAUM and Dr. HELEN G. GRÜNBAUM described some of the results of the action of radium on normal tissues, namely, on skin from a human subject, and on the cells of the liver, gall bladder, and stomach in monkeys. The skin was acted on five, six, twenty-four, and thirty hours respectively. The effects were those of gradually increasing inflammation with subsequent destruction of white corpuscles and apparent proliferation of the surface epithelium. The liver cells after an exposure of nineteen days were affected only in the neighbourhood of the tube. The gall bladder epithelium seemed quite unaffected; the stomach epithelium was in one case replaced locally by fibrous tissue.

The Ferric Chloride Reaction.

Mr. J. F. GASKELL read a paper on the ferric chloride reaction in diabetic urine. He said that it could be taken as a measure of the acidosis present when of mild degree. It indicated by the colour produced the amount of diacetic acid present. The β-oxybutyric acid, which could not be conveniently tested for, was roughly proportional to the diacetic acid present. Coma was always accompanied by a very deep coloration with ferric chloride. The exceptions found in the literature were of doubtful value. The appearance of the reaction was the signal that a benign case of diabetes had become a severe one, and that the tissue metabolism had become profoundly altered. In the early stages the patient was still amenable to treatment and might be reclaimed into the benign class, but if the reaction were strong, treatment would only have a temporary effect in warding off the inevitable end. The direct change to a strict carbohydrate-free diet was both unnecessary and dangerous, as it often gave rise to a ferric chloride reaction when none was present, or increased one already existing. The more gradual reduction was just as efficacious and had not this objection. On these counts it was therefore very important to keep a close watch on this reaction, both as to its presence or absence and also as to the depth of colour obtained. A satisfactory method of influencing the production of acetone bodies they did not at present possess. Baer and Blum had, however, in phloridzinized dogs got results by feeding with certain substances which offered ground for the hope that it might be possible to obtain such a result.

Specimens.

Among the exhibits was an instance of unobliterated Vitelline duct, with umbilico-mesenteric band, in a full-time fetus, shown by Mr. J. KAY JAMIESON.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

Thursday, March 10th, 1910.

Dr. GEORGE WILKINSON, President, in the Chair.

Intracranial Tumours.

DR. ARTHUR HALL, in a paper on intracranial tumours, discussed the clinical differences between tumours in the cranium and those affecting other parts of the body. The varying importance of different tumours in the body

generally depended on their histological structure, namely, whether they were malignant or innocent, but such a distinction was of much less importance with intracranial tumours. The mechanical factors of a closed, practically non-expansile box, and a delicate, easily compressed, and in many parts vital organ already filling the box, played so large a part that a tumour, innocent histologically, and small as tumours go, might yet prove as fatal within the cranium as if it were malignant. As the trouble was due to increased intracranial pressure, there might be clinically included with tumours such different pathological entities as tuberculous foci, gummata, cysts, including chronic local serous meningitis, abscesses, aneurysms, and even haemorrhages. Although it probably never happened that an ordinary cerebral haemorrhage was wrongly diagnosed as a tumour, yet the converse was often true, namely, a tumour with sudden hemiplegic onset was diagnosed as merely a cerebral haemorrhage. As regards treatment, the only drug of any benefit was iodide of potassium, and this should always be given early and fully, with or without a specific history; for it was always possible that there might be a gumma present when no other symptoms of the disease had at any time presented themselves. Other conditions, such as chronic serous meningitis, might improve temporarily, even to a remarkable extent, under the drug, and other unexplained cases (? pseudo-tumours), apparently showing all the symptoms of intracranial tumours, had been known to benefit or even disappear. It must be remembered before urging operation that there were cases of tuberculous foci which improved instead of getting worse owing to their gradual shrinking, and that some cases of slowly developing tumour, such as osteo-fibroma, remained practically quiescent for many years. As regards operation, in spite of many difficulties and failures, yet the occasional brilliant result obtained and the desperate nature of the disease made every careful effort at localization and removal not legitimate, but strongly to be urged. These two points—namely, the great suffering in a progressive case when left to itself, and the occasionally brilliant results of operation even in apparently hopeless cases—should be constantly borne in mind. Professor J. M. BEATTIE read a paper, entitled, "Further experiments with a streptococcus isolated from cases of acute rheumatism." It dealt with the results of intraperitoneal and intravenous injections of cultures of this streptococcus in rabbits, and was illustrated by numerous statistical slides.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.

Friday, March 18th, 1910.

Professor STOCKMAN in the Chair.

The Use of the Cystoscope.

DR. J. M. RENTON read notes on some cystoscopic cases. In Case I—a woman aged 27, with tuberculous disease of the right kidney—cystoscopic examination, after the injection intramuscularly of a solution of indigo-carmine, showed that only this kidney was functionating, the other having probably been destroyed by antecedent disease. Treatment with tuberculous vaccine was successful. In Case II—a woman aged 34, with a streptococcal pyelitis—the cystoscopic examination determined that the left kidney was the seat of disease. Incision of the kidney and drainage resulted in recovery. In Case III—a man aged 29—stone in the bladder had been diagnosed. The cystoscope showed merely a chronic cystitis, which bacterial examination proved to be gonorrhoeal. Case IV—a woman aged 35—presented symptoms of vesical calculus, but the sound failed to reveal a stone. With the cystoscope a small uric acid stone was seen lodged on a shelf of granulations. This was extracted per urethram. In Case V—a man aged 63—symptoms pointed to prostatic enlargement, though no enlargement could be felt. Cystoscopic examination showed a marked intravesical projection of the prostate. A suprapubic prostatectomy was followed by recovery. In the last case a woman aged 50 had painless haematuria intermittently for three or four years. Cystoscopic examination revealed large numbers of small warty papillomata, which the microscope showed to be simple in character. By suprapubic operation as many as possible were removed. Nine months later bleeding recurred, and the operation was repeated. Since then eight months had passed without bleeding, but the cystoscope still showed a considerable number of papillomata.

Closure of the Cerebral Arteries.

Dr. GEORGE A. ALLAN read notes on cases illustrating the effects of temporary and permanent closure of the cerebral arteries. In one case, the subject of mitral stenosis, there were recurrent attacks of paralysis without loss of consciousness or sensation. Sometimes the paralysis affected only the arm, at times the arm and leg of the same side, or sometimes a hemiplegia was noticed. The recovery after an attack, which usually lasted fifteen to thirty minutes, was always complete. The condition was known to have been in existence for at least three years. A second case had transient loss of memory lasting for eighteen hours, events which occurred during that period being lost to the patient's consciousness. This case had a slight high-tension pulse, but no evidence of organic disease. A third case developed loss of speech and paralysis of an arm a few weeks after labour. She was also the subject of a mitral valvular lesion. Later, paralysis developed in all four limbs and in the face. She became blind, and gangrene occurred in several of the finger tips, the nose, ears, and other sites. The patient died two months later. Dr. E. HASWELL WILSON described the *post-mortem* finding. Thrombosis was found in the arterioles of the brain, causing cortical necrosis, and in the peripheral arterioles, where gangrene had developed. At the same time there was an entire absence of any local disease of the vessel wall to account for the thrombosis. The cases were ascribed to angiospasm, in view of the transient nature of the attack, and the complete recovery in the first cases, and on account of the absence of lesion in the arterioles in the last.

Reviews.

GOUT.

WE are pleased to see that Professor LANCEREAUX is still active and able to contribute to medical literature. His book on Gout[1] is based upon long experience, and, like so many who have written on the subject, he has suffered from it in his own person. He takes a broad view of the subject, accepting Sydenham's dictum *totum corpus est podagra* as his motto. He thinks there is a tendency to allow the articular affection to make us forget most of the other phenomena, and this he considers a grave mistake. Some may, however, believe that he goes too far in the other direction, as he includes under gout all that we call chronic rheumatic arthritis or chronic rheumatism, and even "epistaxis, dyspepsia, and chlorosis" are regarded by him as gouty manifestations when they occur in young women, among whom, he says, they "are observed nearly exclusively in those of gouty descent." For Professor Lancereaux gout is a disease of the sympathetic system, characterized by vasomotor and trophic troubles. His main argument against the uric acid theory is that excess of uric acid in the blood has not been found in every case of gout that has been examined. According to him the symptoms of gout are "incontestably subordinated to derangement of the nervous system," which presides over local circulation and general nutrition, and he finds that the sudden appearance of the gouty phenomena, their mobility and intermittence, and the subjective sensations of pain, burning, and itching are "so many proofs of this origin." He admits that the true cause of gout is not known, but he believes heredity to be the efficient cause; without hereditary predisposition there can be no gout, and with this predisposition there may be gout in spite of the absence of all the usual causes, such as excess of animal food, the use of wine and the like, which, in his opinion, only aggravate the disease but do not cause it. He admits that it might be suggested that uric acid is the poison that acts on the nervous system, but he sets this aside at once, on the ground that "gout may exist in the absence of the excess of uric acid in the blood." He sees a great analogy between the arthritis of tabes and that of

[1] *Traité de la Goutte.* Par le Docteur E. Lancereaux. Paris: J. B. Baillière et Fils. 1910. (Demy 8vo, pp. 431. Fr. 10.)

gout, and he asserts that division of the trunk of the sympathetic nerve may cause "fluxions" similar to those of gout, but those fluxions only give rise to diarrhoea; this satisfies him, and he declares that the point is "perfectly cleared up." He denies that any poison can cause gout; he does not deny the existence of saturnine gout, but gets out of the difficulty by saying that this is not really gout, although he says gout may have its origin in some chemical injury to the nervous system, which is transmitted by heredity in the same way as Brown-Séquard's guinea-pigs transmitted their artificially produced epilepsy to their descendants. We may remark in passing that this often-quoted case is exceedingly doubtful, as idiopathic epilepsy is said to be common among guinea-pigs. Since he takes this view of the disease it is not surprising that Professor Lancereaux includes in this book many diseases which would not ordinarily be called gouty. In treatment he recommends temperance in food and drink, but rejects vegetarianism, and does not even mention purin-free diet. He allows alcohol, but says that in his own case abstinence from wine was beneficial. He recommends fresh air, sunlight, and exercise, and speaks well of the general effects of hydrotherapy. The drug upon which he seems to rely most is quinine.

Dr. FALKENSTEIN,[2] who has suffered from gout in his own person for thirty-five years, now at the age of 68 publishes his experience of the disease and its treatment by hydrochloric acid and iodine, dedicating the volume to his children as the "heirs to his affliction." He has small respect for orthodox views and methods, which he says gave him no help. He brought forward his method in 1904, but has since then improved it, and hopes that it may be taken up by younger hands who will make it still better. Without attempting to explain how it arises originally, he is a strong believer in the inheritance of gout; but he is convinced that excessive eating and drinking do not produce it, and can at most precipitate an attack or make it worse. He holds that the gouty do not make more uric acid than the healthy, but that their difficulty is to eliminate the poison; this he attributes to defective or anomalous ferment action arising primarily from deficient gastric digestion. He believes that uric acid is normally converted by oxidation into alloxan and urea, or that some such chemical splitting up takes place. He had his first attack of gout in the form of arthritis in the wrist in 1875 at the age of 32. In 1886, when he was 43, he had a regular sudden arthritis of the great toe joint, and this was the beginning of his martyrdom; the disease remained his companion until he abandoned the teaching of the textbooks and adopted his own line. His experience has taught him that alcohol may precipitate an attack or aggravate it, but that during the interval it has no effect, and even beer and wine may be used without any bad result. To illustrate the fallacy of attributing an attack of gout to eating and drinking, he tells how he went one day feeling perfectly well to a big dinner, but was seized with a sharp pain in the heel just as he was going to take his first mouthful of soup; the pain became so great that he had to leave the table and go home at once. If the attack had come on an hour later it would have been attributed to the dinner. In this way many harmless things are blamed—for instance, strawberries. His treatment consists of large doses of hydrochloric acid taken as acidulated water during meals. He supports his plan of treatment by quoting Van Loghem's experiments on rabbits in which artificial gouty foci were made by injecting a solution of uric acid; some of the animals were treated by hydrochloric acid and some by alkalis administered by the mouth; they were then killed, and in those treated by acid the uric acid was unchanged, with no sign of irritation, but in those treated by alkalis the uric acid had been converted into urate of soda, and was surrounded by a good deal of inflammation. He gives 4 or 5 drops of hydrochloric acid, equivalent to forty or fifty drops of the dilute acid, in a tumblerful of water, a dose much smaller than that given by some.[3] In addition he prescribes a preparation of iodine combined with vegetable albumen called iodglidine, prepared by Dr. Klopfer of Dresden. It is said to increase the nitrogen output and is given in tablets, two daily after meals; later on he reduces the dose to one. His diet is very liberal; he allows meat and meat soups and meat extracts to stimulate the gastric secretion, wine, beer, and cognac, good wine vinegar with salad, spices, tea, coffee, and fruit. He commends early rising, the use of a bath, and lays stress on exercise. He forbids pork and salmon, smoked and salted meats, and thinks glands better avoided. He objects to milk and allows only a little cheese. Sugar and sweet wines are forbidden; tobacco is allowed in moderation. He has no sympathy with vegetarians, and ridicules the argument that as we are descended from frugivorous apes we ought to live as they do, alleging that a monkey will eat meat when he can get it. The dietary allows for breakfast, fruit, coffee with cream but no sugar, bread and butter; at 11 o'clock, fruit again; at mid-day dinner, soup, raw ham, peas, French beans, spinach with eggs, cauliflower, mutton or veal, salad, one or two glasses of water acidulated with 6 to 10 m. of hydrochloric acid; one cup of black coffee and a cigar; supper, cold meat, butter, black bread, sardines or anchovy, butter with white bread, one or two glasses of acidulated water and one glass of beer. The food for each day in the week is varied slightly, so that on other days potatoes, light puddings, beef, cheese, stewed plums and apples are taken. During the attack he gives morphine or colchicum to relieve the pain, and aspirin in slighter attacks. He speaks favourably of the hydrochloric acid baths, which he says were recommended by William Rowley in 1792.[4] These baths had a great vogue in Paris a hundred years ago, the crude hydrochloric acid being sold originally as a secret remedy for a louis d'or a bottle until its true nature was discovered. The quantity he uses is 200 to 300 grams (6⅔ to 10 oz.) to a full bath, and 50 to 70 grams (1⅔ to 2⅓ oz.) to a foot or hand bath. Such a bath should be used once a week or once a fortnight. He objects to saline aperients on account of the alkali they may contain, and prefers rhubarb, cascara, or aloes. He quotes in testimony of the good effects of his methods accounts written by patients which remind us of the testimonials given in quack advertisements, but there is no reason to doubt the good faith of the author, although his views are not in accordance with those generally held.

[2] *Die Gicht und die Salzsäure Jodkur.* Von San.-Rat Dr. Falkenstein. Berlin: August Hirschwald. 1910. (Sup. roy. 8vo, pp. 194. M.5.)
[3] Conf. Leo, *Salzsauretherapie.* BRITISH MEDICAL JOURNAL, December 7th, 1907.

PUBLIC HEALTH ADMINISTRATION.

THE textbook upon *Sanitary Law and Practice*, by Dr. W. ROBERTSON and Dr. C. PORTER,[5] is arranged upon an excellent plan. Each branch of the subject is dealt with in a separate section, the first part dealing with the law and the second with the duties of the health official in reference to the special subject under review. For example, among the subheadings of the chapter dealing with nuisances are book-keeping, inspections, house-to-house inspection, service of notices, prosecutions, examination of houses, drain testing, reports. Tables are used in several chapters with the best results; one such gives in parallel columns the chief offensive trades, the nature of each trade, the source of the nuisance caused by it, and the remedies which may be suggested for its abatement. The principal infectious diseases are dealt with in similar fashion in a table which gives the name of the disease, its incidence as regards age and season, period of incubation, its main features, differential diagnosis, period of isolation and of quarantine, mortality, and death-rate, and the recognized methods of prevention. The statement of the authors with regard to the compulsory removal of patients to an isolation hospital is not quite accurate so far as England and Wales are concerned. They state that if the removal of a patient "is urgently called for the medical officer of health will have to inform the householder that a Justice's warrant will be obtained empowering him to carry out forcible removal." Under the provisions of the Public Health Act, 1875, the order of a Justice is addressed to the officer of the sanitary authority. The patient cannot be forcibly removed, but a penalty can be inflicted upon any person who obstructs

[4] *Treatise on the Regular, Irregular, Atonic and Flying Gout.* London, 1792.
[5] *Sanitary Law and Practice: A Handbook for Students of Public Health and Others.* By W. Robertson, M.D., D.P.H., Medical Officer of Health of Leith, and Charles Porter, M.D., D.P.H., M.R.C.P.Edin., Medical Officer of Health of the Metropolitan Borough of St. Marylebone. Second edition. London: The Sanitary Publishing Company 1909. (Demy 8vo, pp. 714, illustrations 74. 10s. 6d.)

the officer in carrying out the order requiring him to remove the patient to a hospital. Another rather misleading expression is used on page 22, where there is a well-thought-out skeleton report for a medical officer of health. In this the term "corrected" death-rate really means "recorded," or, better still, "adjusted" death-rate—that is to say, adjusted for residents and non-residents. On page 655 the authors explain quite properly the meaning of a recorded death-rate, and on the following page they explain the meaning of a corrected death-rate—corrected for sex and age. This confusion of the two terms is very frequent, and is to be met with in quite unexpected quarters. There are some statements made in the earlier pages of the work which are rather startling, though it is due to the authors to suppose that they have occurred owing to one of them being specially familiar with the administration of the public health laws of Scotland, in which country the sanitary administration differs from that of England and Wales. On page 2 we are told that the local authority in a county borough is the mayor and aldermen, while in a municipal borough the local authority is the municipal council. Every urban district council does not administer the Food and Drugs Acts nor appoint a public analyst, as stated on page 3. We learn on page 29 that, to all intents and purposes, the work of medical officers of health of counties is the same as that of medical officers of health in cities, so that when we reach page 38 we are not so surprised at being told that in "the counties and larger urban districts in England and Wales, where the medical officer of health is the recognized head of the sanitary department . . . the work of the sanitary inspectors is carried out more or less under his direction." We have no desire to be hypercritical, but these are some among of the inaccuracies which we have come across; and as the volume is intended as a textbook for students preparing for examinations it is important that they should be pointed out. They depreciate the value of what is in so many respects a very full and excellent treatise.

Dr. LOUIS PARKES, who delivered a course of lectures at the University of London in February, 1909, under the trust created by the will of the late Sir Edwin Chadwick, K.C.B., has now presented the views he then expressed to a larger audience in a volume called *House Drainage, Sewerage, and Sewage Disposal.*[6] The lectures contain exactly what Chadwick, that great pioneer of sanitary science, would have desired to have promulgated far and wide. In successive chapters Dr. Parkes deals in well-ordered sequence, and with a charm of phrase to which his former writings have accustomed us, with the causation of disease by excretal refuse, the conservancy methods of excretal removal, modern methods of house drainage and sewerage, and the disposal of sewage. The objections to the conservancy system of excretal removal are admirably put, and the directions for carrying out the system when it must inevitably be employed cannot fail to be of service to those who reside in country districts. It is a pity, perhaps, that even a qualified approval is given to the employment of dry ashes and cinders in earth closets; as they are sterile they can exert no bacterial action on the contents of the earth closet, and every effort should be made to procure the employment of earth which is teeming with germ life. At the time when a departmental committee is engaged in considering the question of retaining the disconnecting trap in our system of drainage, it is of interest to learn that Dr. Parkes would approve its retention. He considers that it permits each house-drainage system to be ventilated separately with its own fresh-air inlet and foul-air exhaust, thus providing that comparatively fresh and pure air is continually circulating throughout the house drains and soil pipes, and has the further advantage of preventing the access of rats from the sewers into the house drains.

PERSONAL HYGIENE.

IN his book on the *Laws of Life and Health*, Dr. ALEXANDER BRYCE[7] appears to assume that the laws of health are known to us, for he has attempted to codify them in a decalogue, and claims thereby to have rendered them easy of access to all who are interested in conserving their health. He evidently addresses himself mainly to the public, but many medical practitioners will read his book with interest, and we think with profit; for although Dr. Bryce, speaking as one having authority and laying down his laws *ex cathedra*, may not find every one to agree with him in all that he says, he has given a careful account of modern views on metabolism and diet, and has explained in simple language things which are not so familiar to many medical practitioners as they should be. We may summarize his laws briefly thus: (1) Urges three meals a day; under this head metabolism and dietetics are discussed; (2) advocates drinking three pints of fluid a day; (3) lays down the importance of regular work; (4) recommends not less than eight hours' sleep; (5) teaches the value of fresh air; (6) of exercise; (7) of baths; (8) of the need of protecting the body by clothing; (9) of regularity and moderation in habits; (10) of cheerfulness and equanimity. While the rules laid down are good, we doubt whether Dr. Bryce is right in saying that "disease of all kinds and of every degree of severity must have been due to violation of the laws of health by the victim of the disease or his immediate or remote ancestors" (Introduction, p. xvii), if by that we are to understand that the above are the laws referred to, and that if they are followed disease will be banished from the world. No doubt proper hygiene goes far to maintain health, but it certainly does not place mankind beyond the risk of infectious diseases, and these not only cause death but are responsible for a great deal of organic damage that implies impaired health lasting perhaps for years or for the whole of life. We do not know why, in the description of sugars (p. 4), glucose (grape sugar) is described as the result of inversion of cane sugar by acids; the statement is not untrue, but it is not the form of glucose which would be familiar to the lay public. It seems to be absurdly strict to forbid oranges or other sour fruit to be eaten "at the same meal" as starchy food in order that the action of the saliva may not be hindered, and in discussing the action of this secretion it would have been comforting to his readers if he could have told them that food in the stomach is not mixed up, but remains more or less in the relative position occupied by it as it enters, so that the starchy food at the end of the meal has an opportunity of being thoroughly acted upon by the saliva before the gastric juice has time to reach it. Dr. Bryce's rule against drinking at meals is also too much at variance with ordinary practice to be sound. No doubt those who have weak digestions may not be able to dilute their gastric juice without unduly weakening its action, but there are a great many people who find themselves all the more comfortable for drinking a certain amount of fluid at meals, and a practice which is so general should not be lightly condemned. On the other hand there are many people, especially women, who drink too little fluid, but though Dr. Bryce is quite right in urging that a certain minimum quantity should be taken, we question whether an uncomfortable feeling in the head in the morning is so often due to too little fluid having been taken the day before as to too much, especially when it was not pure water. His arrangements for sleeping in the open air without going out of doors are ingenious, but we cannot imagine many people caring to have the head of the bed pushed into a covered balcony such as he sketches, nor do we see the need for putting the bed so near the window as to require the use of an awning to surround the head and shoulders, shown in Fig. 1 (p. 211); a wide open window surely gives all the fresh air that is needed without such devices. We doubt his dictum that work is not exercise, as we find it is frequently necessary to remind patients who are tired by work that they cannot expect benefit or anything but injury if they take exercise in that condition. On page 253 he relates an extraordinary case telling how Professor Eric Lexer of Koenigsberg is said to have "excised the knee of a young woman of 18 and replaced it by that of an old man whose leg had been amputated for senile gangrene; wonderful to relate the worn-out knee-joint of the old man became part and parcel of the young woman and underwent a process of rejuvenescence in her body." We find such a story is so difficult of belief that

[6] *House Drainage, Sewerage, and Sewage Disposal in Relation to Health.* By Louis C. Parkes, M.D., D.P.H. London: H. K. Lewis. 1909. (Cr. 8vo, pp. 150. 2s.)

[7] *The Laws of Life and Health.* By Alexander Bryce, M.D., D.P.H. London: Andrew Melrose. 1910. (Demy 8vo, pp. 441; illustrated. 7s. 6d.)

unless Dr. Bryce is prepared to vouch for the truth of it we do not think he should have included it in a book intended for lay readers who cannot judge of its inherent improbability, to use a mild term. We regret, too, that he should have thought it necessary to give prescriptions for the treatment of skin trouble and baldness, and the book would have been improved by the omission of various facetious remarks attributed to anonymous doctors not generally of a kind to raise our profession in the public estimation; there are two or three stories with which the late Sir Andrew Clark, whose name by the way is always wrongly spelt, is discredited, one of these being about the thirty-two bites from the thirty-two teeth which is usually attributed to Mr. Gladstone; on page 389 is a familiar chestnut which surely never had anything to do with Sir Humphry Davy, who was not a medical practitioner and would have been unlikely to treat a patient with or without a thermometer.

THE EDUCATION OF GIRLS.

THE fact that Dr. CAROLINE LATIMER'S book, entitled *Girl and Woman*,[8] is introduced to the public by a foreword from the pen of Dr. Howard Kelly, the distinguished Baltimore professor, gives it a special claim on the attention of the medical profession, and creates a presumption that the subject matter is dealt with in such a manner as to make it suitable for and commendable to the general reader. The avowed object of the book is to guide young women wisely in the conduct of their lives, in the care of their health, and in the choice of pursuits fitted to their sex. Dr. Howard Kelly expresses his definite opinion that in the training for the work of life, boys and girls ought not be educated upon precisely the same plan, but that certain modifications in conformity with the elementary difference of sex are essential if the average girl is to achieve a normal development of mind and body as permanent and satisfactory as the average boy. He sums up his opinion by saying:

> In their practical, daily human relations the sexes are never precisely alike except during the earliest years of childhood. For the first ten years of life a boy and girl may be looked upon and treated as identical, though even then the foreshadowing of the coming changes are always visible to keen eyes. But with the approach of puberty the fundamental differences, everywhere stamped upon the sexes in nature, become sharply defined, and the breach thus made widens with the succeeding years, until maturity finds the man and the woman two distinct entities, complementary in all their future relations.

Since Dr. Caroline Latimer's book is dedicated to mothers and daughters, it may be assumed that the intention of the authoress has been to make it as little technical as possible. In this she has only partially succeeded. This is perhaps inevitable when the writer is a qualified practitioner whose habits of thought and expression are saturated by an intimate acquaintance with practical and scientific medicine, but there is no excuse for such loose and inaccurate statements in regard to disease as we find scattered throughout this volume. An entirely wrong conception of the seriousness of chorea, for instance, is conveyed by the statement that, "with the exception of a few rare cases of a peculiar nature, the disease runs its course, and recovery takes place spontaneously." Similarly, it is not in accordance with the generally accepted experience to say of epilepsy that "there are areas of actual disease in the brain, though it seems to be doubtful how far these are the result of the epilepsy or its cause." Again, it is difficult to realize what therapeutic value can possibly attach to the addition of "two teaspoonfuls of mustard to a tubfull of water as hot as can be borne." We have no desire to be hypercritical, because the book contains much excellent advice and sound information; but in many minor details, such as those we have referred to, it may be possible to render the text more accurate in a future edition.

The most interesting feature of Dr. Caroline Latimer's treatise, however, and the object for which it has presumably been primarily written, is the discussion which it embodies of the important and difficult question of sexual education. The authoress enters a strong and passionate plea for the better instruction of girls in the duties and responsibilities which Nature imposes upon their sex, as well as upon the evils which may ensue upon an unwise disregard of the physiological limitations which the periodic disturbance of their health entails, or the consequences which are the penalty of sexual unrighteousness. The "let-alone" system, so much in vogue at present, is strongly condemned, and an appeal is made to mothers that they should adopt towards their daughters a more frank and explicit attitude in regard to sexual knowledge, and that they should endeavour to establish a confidence that will bring "the child into the same relations of sympathy and openness in matters of sex that should exist between her and her mother in all respects." To this end it is suggested that the child's mind from its early years should be trained to the knowledge of reproduction in lower animal and vegetable life as one of the natural laws of existence, and that from this initial apprehension she should be gradually led to understand that in human beings the same law of reproduction is a necessary provision for the continuation of the species. Further, the authoress advocates for older girls a course of public school instruction in biology comprising elementary lessons "on the function of reproduction and kindred subjects from the human side, and the questions of health associated with it." She dismisses contemptuously the old-fashioned idea that the natural modesty of the girl will be jeopardized by accurate sexual knowledge judiciously imparted, and argues that greater evil results from the present state of ignorance in which most girls are brought up than can ever accrue from a more intimate acquaintance with the laws of Nature. She does not deny the difficulties that exist in dealing with the subject, but she believes that the introduction of scientific knowledge on sexual matters is the one way of meeting those difficulties and of overcoming the evils arising out of the antiquated reticence which hitherto has made the sex problem an unmentionable mystery to ninety-nine girls out of a hundred.

It will probably be long before the views temperately expressed in this volume are accepted in this country, but even the most ardent adherent to the claims of modesty must admit that there is room for improvement in the education of girls on a subject which so closely concerns the practical affairs of life. The difficulty is to be sure of the lines along which this education can be most effectively and wisely conducted. Dr. Caroline Latimer's book is a praiseworthy attempt to show one way of solving the problem.

BIER'S HYPERAEMIC TREATMENT.

IT is not surprising that a manual of the practical application of *Bier's Hyperaemic Treatment in Surgery*[9] should have a large sale. Undoubtedly there has been a demand for instruction in the technique of a comparatively novel method of treatment, especially as it is one which claims to be based on the utilization of natural recuperative forces, and to minimize the menace of the knife. The authors have a profound—indeed, a touching—faith in the method they expound, but it is not the faith that removes mountains. The little devil, doubt, does creep in even if he has to hide in corners. So long as it is a matter of directions as to practice and descriptions of apparatus the reader is carried unresisting along, but in this volume, at any rate so far as pathological considerations are concerned, the question is begged at the outset. Very likely it is erroneous, but these pages certainly leave the impression that the authors look upon recovery from a local lesion as equivalent to "cure." Not that the Bier treatment is vaunted as a panacea; that is, in fact, directly disclaimed. "Of course, it must not be assumed that now the millennium has come. . . . Far from it. If the rules that are laid down in this book are not followed, if . . . a correct diagnosis . . . does not underlie the treatment, the trouble will get worse." But, gentle reader, you have got the book, so the millennium is not very far off. Be that as it may, there is a great deal of useful information in an easily accessible form in the text, and some of the subsidiary uses to which the suction apparatus may be put will prove interesting. The use of vacuum pressure for gentle

[8] *Girl and Woman: A Book for Mothers and Daughters.* By Caroline Wormsley Latimer, M.D., M.A., formerly Instructor in Biology, Woman's College of Baltimore. With an Introduction by Howard A. Kelly, M.D., Professor of Gynaecological Surgery, Johns Hopkins University. New York and London: D. Appleton and Co. 1910. Demy 8vo, pp. 351. 6s.)

[9] *Bier's Hyperaemic Treatment; a Manual of its Practical Application.* By Willy Meyer, M.D., and Professor Dr. Victor Schmieden. Second revised edition. Philadelphia and London: W. B. Saunders Company. 1909. (Roy. 8vo, pp. 280; illustrations, 103. 13s.)

correction of joint deformities and for mobilization of stiff joints is ingenious; and if the associated hyperaemia does all that is claimed for it by way of inhibiting pain, must have extensive applications. Attention is drawn to a good many pitfalls and dangers, but the suggestion that suction glasses should be applied to the cervix uteri "for the betterment of amenorrhoea" might give pause to enthusiasm. The book deserves, and no doubt will have, a great many readers. Though it can be done comfortably, it should not be read at a sitting. One can have too much even of a good thing, and do it injustice in consequence. To those whom it may concern we may add, "ware split infinitives." There is a good bibliography and an excellent index; the illustrations, too, are extremely good.

SUPRARENAL TUMOURS.

THE monograph on new growths of the suprarenal capsules, by Professor CARL WINKLER,[10] of the Breslau Royal Pathological Institute, is an important work, and should be studied by all interested in this department of morbid anatomy. It is based upon the study of 24 cases, with the clinical history and the *post-mortem* findings, both macroscopically and microscopically, which he gives in detail; it is illustrated by four good plates, containing twenty-six figures. His experience is much wider than this account would suggest, as during the last ten years a very large number of cases have been observed at the institute, and in the course of the last year no less than 27, but the cases of the series on which the monograph has been founded were selected on account of their completeness. He relates 13 examples of primary growths—10 epitheliomata and 3 sarcomata—and 11 secondary cases. The development of these glands from the primordial renal blastema is fully described, and is held to explain the structure and the characteristics of the new growths. Attention is drawn to the fact that there was a history of injury in 4 of the cases, and references are given to several other examples which have been published. In a final chapter the author discusses the relation of disease of the suprarenal capsules to morbus Addisonii, but is not able to clear up the difficulties surrounding this problem. In only 2 of his cases was there any bronzing of the skin, and from various published sources he quotes statistics showing that while, on the one hand, not only primary but metastatic tumours have been found to be associated with bronzing of the skin, on the other enormous tumours of both capsules have occurred without this symptom; nor can any relation be established between the degree of the disease and the pigmentation, and he is not satisfied that the destruction of any one tissue, either cortex or medulla, can be shown to be related to the special symptoms of this complex disease. He can only say that he believes Addison's disease to stand in close relation to the suprarenal bodies and to their chromaffine cells, but his researches do not enable him to decide whether the explanation is to be found in an affection of the cortex or medulla and sympathetic apparatus or both together. He does not lose sight of the fact of the existence of accessory suprarenal glands which undergo hypertrophy when the main organ is destroyed and may vicariously perform its functions and thereby afford a partial explanation of some of these paradoxes.

EPILEPSY IN CHILDHOOD.

LITTLE that is known or has been written about the forms of epilepsy observed in children can have escaped Professor VOGT, and he has set it all down in a most carefully written and exhaustive monograph, *Die Epilepsie im Kindesalter*,[11] the whole being bonded together by numerous reflections and observations of his own. The first chapter deals with the causes and onset of epilepsy in children. In commenting on the frequency with which a history of chronic alcoholism can be obtained from the parents of epileptic children, Vogt gives quotations showing that while congenital mental or physical defects are commoner among the Jews than among the Germans, epilepsy is not half as common, and that chronic alcoholism is very much rarer among the Jews than the Germans. As regards the age at which epilepsy first manifests itself, Gowers and many others have shown conclusively that the three periods of election are infancy, the beginning of school attendance, and puberty. The second chapter deals with the general symptomatology, more particularly from the motor and psychical side, and with the stigmata of degeneration met with in epileptic children; it has been noted that they are particularly resistant to tuberculous infection. The third chapter extends to over ninety pages, and deals with a somewhat heterogeneous collection of interesting questions. Vogt argues that what in this country are often called "teething fits" in infants are commonly distinct from epilepsy, and depend upon a "spasmophil diathesis" set up by improper feeding; one of the best-marked signs of this diathesis is the galvanic hyperexcitability of the muscles shown by its victims, in whom the anodal opening contraction is stronger than the anodal closure contraction, and cathodal opening contraction occurs with a current of 5 milliampères or less. The diagnosis between this spasmophily and epilepsy is discussed at some length. As regards the so-called "organic" epilepsy, dependent upon some local lesion of the brain, Vogt states that the frequency with which it occurs in children has only recently been recognized, and that the status epilepticus is particularly common in these patients. Such cases are not rarely amenable to surgical treatment, and their diagnosis is fully discussed, syphilitic cases being excluded and considered separately. Vogt devotes twelve pages to that rare congenital condition, sclerosis tuberosa of the brain, in which idiocy and epilepsy are observed, and new growths are found *post mortem* in the kidneys (liposarcoma), heart (rhabdomyoma), and skin (adenoma sebaceum). Perhaps the most instructive part of Vogt's book is that dealing with the relations between epilepsy and hysteria, and with the treatment of epilepsy. He urges strongly that each case should be considered and treated on its individual merits, and that no uniform method of treatment (medicinal, dietetic, or otherwise) can be successful. The fifth and sixth chapters deal with the education and social provisions suitable for epileptics, and with their position with regard to the law; some twelve pages are given to a bibliography, and the book closes with a tolerable index. We must congratulate Professor Vogt on the thoroughness with which he has treated his subject from every point of view—clinical, pathological, philosophical, educational, social, jurisprudential. His book is full of good matter, and should prove indispensable to the specialist and the advanced student in nervous diseases.

NOTES ON BOOKS.

THE twenty-eighth volume of the *Medical Annual*[12] has recently been published, and its unnamed editor would seem as fully entitled to congratulation on the result of his labours as usual. As in former years, he has had the advantage of the assistance of contributors all of more or less well-recognized authority in connexion with various points of treatment, their number this year being thirty-two. The net outcome is a work which certainly justifies its subtitle, *A Year Book of Treatment and Practitioner's Index*. So far as can be seen, no suggested new treatment which has been put to practical uses, and whose pretensions have been in any wise supported since the date of the compilation of the last issue, would appear to have been overlooked. Occasionally a passage may be noted in which the writer has contented himself with giving an abstract of one particular paper instead of summarizing the whole of the work done on the subject during the year, but as a rule the task undertaken is thoroughly performed. Information is also given on some subjects about which comparatively little is at present known: the article on hormones, to which Starling drew attention in his Croonian Lectures in 1905, is a case in point. As usual, the volume is well illustrated, among the most striking pictures being those which appear in connexion with a somewhat impressive article by Dr. S. Robert-Simon of Paris, on the therapeutic use of sea water. The utility of the book is, as in former years, increased by short summaries of legal decisions affecting medical men given during the year, and details as to inebriate homes,

[10] *Die Gewächse der Nebennieren.* Von Professor Dr. Med. Carl Winkler. Jena: Gustav Fischer. 1909. (Sup. roy. 8vo, pp. 197, M. 9.)

[11] *Die Epilepsie im Kindesalter, mit besonderer Berücksichtigung erzieherischer, unterrichtlicher, und forensischer Fragen dargestellt.* Von Professor Dr. med. Heinrich Vogt. Berlin: S. Karger. 1910. Roy. 8vo, pp. 231. M. 5.)

[12] *The Medical Annual.* Twenty-eighth year. 1910. Bristol: John Wright and Sons. (Demy 8vo, pp. 840. Price 8s. 6d.)

sanatoriums, spas, new inventions, together with classified lists of books on various subjects which have appeared during the year.

Once more Dr. PRICE has revised and reissued *Hoblyn's Dictionary*,[13] which has for many years been deservedly popular. The editor is always careful about his definitions under headings such as "opsonic index," "psilosis," "skiagraphy," "Roentgen rays," and other subjects more or less novel or specialized about which dictionaries of this class are so often consulted. One or two words or terms associated with medical novelties some of which are of doubtful value, such as "atmocausis," have been overlooked or designedly omitted; yet dictionaries are made use of for information about novelties, and we doubt if the pages of this lexicon are likely to be sought for such subjects as "maltha," "mandrake," and "atlantal aspect," all included in the present edition. Few, if any, new subjects of real importance, however, have been omitted, and Dr. Price has been especially careful about names and terms associated with microbes, admitting in his preface that he has relied in great part on the authority of Crookshank's *Bacteriology and Infective Diseases*. It remains, as we have said of an earlier edition, a useful handbook of reference for the student and the literary worker.

Professor GROSSER, in *Die Wege der fetalen Ernährung*,[14] treats the question of fetal nutrition entirely from the standpoint of comparative anatomy. Commencing with the "embryotrophic" pig, he shows that every transition can be traced from the pig to man, the latter being purely "haemotrophic." The account is illustrated by diagrams. He emphasizes the point that experiments upon animals which have type of placenta so different must not be used in the interpretation of the physiology and pathology of the human placenta. It is interesting to note that the guinea-pig, the commonest experimental animal, has the most complicated placenta which has ever been studied.

Mr. L. B. RAWLING'S *Landmarks and Surface Markings of the Human Body*[15] continues to win popularity, and has become a standard student's handbook. Its popularity has depended largely on its excellent illustrations, and in the third edition several of these have been redrawn and one new plate has been introduced. There are no other alterations in the book, and the author is, we feel sure, wise in keeping its text strictly within the limits defined by its title. We congratulate him on the continued success of the work.

We reviewed Major BASU'S little book on the *Dietetic Treatment of Diabetes* very recently (October 9th, 1909, p. 1073), but he has produced a second edition, which is enlarged and a good deal altered, although still mainly made up of extracts from the writings of others.[16] Major Basu's main point is that diabetes can be successfully treated on a vegetarian diet, and he asserts that the natives of India, who suffer from diabetes and who are vegetarians, live longer than Europeans who are meat-eaters. Unfortunately he does not give us any facts in support of these assertions. It is generally believed that vegetarianism is in itself a cause of diabetes, and the frequency of the affection in India has been attributed to the diet of the people; this view is supported by such observations as those of Charcot and Collins as to the frequency with which glycosuria occurs among the novices in the Monastery of La Trappe. But whether these views are well or ill founded cannot be settled by mere assertion on either side, and Major Basu would be contributing really valuable material to our knowledge of the treatment of diabetes if he would publish cases of diabetes treated on vegetable diet with success. His advocacy of the use of cocoanut is in no way novel, as it has been used for many years in this country for the preparation of diabetic bread substitutes, though it has been given up lately in favour of those made with a casein basis.

[13] *Hoblyn's Dictionary of Terms used in Medicine and the Collateral Sciences.* Fourteenth edition, revised throughout, with numerous additions by John A. P. Price, B A., M D.Oxon, Surgeon to the Royal Berks Hospital; late Physician to the Royal Hospital for Children and Women. London: George Bell and Sons. 1909. (Cr. 8vo, pp. 880. 10s. 6d.)

[14] *Sammlung anatomischer und physiologischer Vorträge und Aufsätze.* Edited by E. Gaupp and W. Nagel. Heft 3. *Die Wege der fetalen Ernährung.* By Professor Dr. O. Grosser of Vienna. Jena: Gustav Fischer. 1909. (Roy. 8vo, pp. 20; figs. 10. Pf.60.)

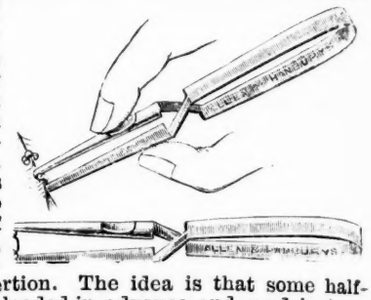
[15] *Landmarks and Surface Markings of the Human Body.* By Louis Bathe Rawling. Third edition. London: H. K. Lewis. 1908. (Demy 8vo, pp. 103; figs. 31. 5s.)

[16] *The Dietetic Treatment of Diabetes.* By B. D. Basu. Second edition. Allahabad: The Panini Office. 1909. (Cr. 8vo, pp. 52.)

MEDICAL AND SURGICAL APPLIANCES.

Forceps for holding Michel's Sutures.

THE forceps figured in the accompanying illustration have been made by Messrs. Allen and Hanburys, Limited, at the suggestion of Mr. E. Canny Ryall. They are intended for holding Michel's clips, and designed to supplant the "magazine" clip-holders, which work so beautifully dry, but so often fail to give satisfaction when actually required in operation. The crossed-spring is applied ingeniously to secure a safe hold of the clip until wanted, whilst affording convenient grip for insertion. The idea is that some half-dozen pairs should be loaded in advance and used in turn when the wound is to be sutured. Whether or not any gain in time over the original method of carrying a supply of clips on the shank of the approximating forceps will be effected remains to be seen.



A Controller for Electric Current.

The outstanding objection to electricity as a means of illumination hitherto has been the absence of intermediate stages between "full on" and "quite off," unless resistances are employed which dissipate in heat the energy withheld from the light. In order to obviate this difficulty, a useful little switch is now manufactured by Messrs. Adams and Company (109, Victoria Street, S.W.), the purpose of which is so to regulate the current as to make it possible to obtain any required intensity of light without wastage. The Watkin Switch works at seven degrees of illumination, and on the lowest stop the reduction is estimated to be equal to a saving of 80 per cent. Even this feeblest illumination, however, as we have had the opportunity of observing, is ample for the purpose of a night light, and from the point of view of the comfort of patients it seems preferable to a few pilot lights left "full on" in the wards at night. A saving is also effected in lamps, especially the delicate metallic filament lamps. It is stated that the switch is already used in a number of hospitals and asylums, and that it can also be employed for controlling electric fans and electrically-driven surgical appliances.

THE PUBLIC TRUSTEE.

THE duty of acting as trustee or executor is accepted by most men with reluctance, and is undoubtedly, as a rule, a thankless task. It is, therefore, not surprising to find that more and more advantage is being taken of the Act passed in 1906 establishing the office of Public Trustee. The Act came into force on January 1st, 1908, and the Second General Annual Report of the new official shows that the nominal value of the investments held by the Public Trustee at the end of last year was approximately 5½ millions. The business transacted has emanated from residents in all parts of England, and from British subjects in all parts of the world. The fees received during the second year more than trebled those received during the first, while the expenses have barely doubled, and a small surplus was shown on the work for the year 1909.

Ordinary Trusts.

In the first year, 1908, the Public Trustee was appointed an ordinary trustee to 248 trusts; last year he was so appointed to 431 trusts, so that he is now trustee to 679 ordinary trusts. A number of trustees have availed themselves of the Act in order to obtain relief from the difficulties anticipated in tracing those ultimately entitled on the death of the life tenant; but various motives, such as personal distrust and inexperience in money matters, have led persons of both sexes, more especially ladies, to make revocable settlements of their property and appoint the Public Trustee to protect it. By such a settlement the settlors are relieved from the responsibility of seeing to the safe keeping and investment of the funds, while at the same time they do not deprive themselves of the right to obtain the repayment of the capital should they at any time require it. In certain cases the Public Trustee has been able to repair grave breaches of trust, in some cases

at the expense of morally innocent but negligent trustees. In other cases the Public Trustee was unable to do more than expose the malpractices of previous trustees and to salve what remained.

The Public Trustee sends to the beneficiaries of each trust periodical information as to the present state of the investments of the funds, the income arising therefrom, and the dates of payment.

Executorial Work.

The Act also empowered the Public Trustee to act as executor, either alone or jointly with personal friends or relations of the testator. As compared with the year 1908 the number of such estates has almost trebled, as has also their value, but as the number of executorships undertaken by him last year was only 57 (31 sole and 26 joint) this business is only in its infancy, although information supplied by the testators themselves shows that the Public Trustee has been appointed executor of estates valued in total at over 29 millions sterling. Several businesses have been disposed of within a few months of the date of death, including two doctors' practices. An appreciable increase is shown in the disposition of executors to renounce probate, and in the willingness of residuary legatees on whom the right of administration then devolves, to stand aside in favour of the Public Trustee. He has also been appointed by the Court as the administrator of the estate of an intestate in 17 cases, as against 5 in 1908; this procedure is particularly convenient in the case of infants. Further, the Act enables executors and administrators to relieve themselves of the responsibility of administration by empowering them to transfer an estate in course of administration to the Public Trustee, provided that the sanction of the Court can be obtained.

Small Estates and Compensation Cases.

The Act made special provision for the cheap and simple administration of the estate of a deceased person, and of compensation cases when the amount involved does not exceed £1,000. It would appear that the poor have availed themselves of this provision to a small extent only, owing no doubt to the fact that the class of person intended to be benefited are the least likely to know of this provision of the Act.

The rules recently made by the Postmaster-General in connexion with the opening of Post Office Savings Bank accounts in the name of the Public Trustee have proved of great value, and it is anticipated that they will be extensively utilized in the case of small estates and compensation cases. A rule made by the Supreme Court, on the recommendation of the Master of the Rolls, provides that all moneys recovered or awarded by or on behalf of an infant, or a person of unsound mind not so found by inquisition, are, in the absence of a contrary order of the Court, to be paid to the Public Trustee, to be held and applied by him in such manner as he shall think fit for the maintenance and education, or otherwise for the benefit, of such infant or person of unsound mind. The procedure, which is simple and expeditious, has only recently been perfected, but a few cases have already been dealt with, and others are in process of adjustment. In view of the increase in the number of children for whose care and upbringing the Public Trustee incurs responsibility, a special department has been established under the supervision of a lady, who, where desirable, visits the children in their homes.

Nature of Investments.

It should be understood that the Public Trustee is only legally bound to invest moneys in what are commonly known as "trustee securities" when the creator of the trust so directs, or when the law, in consequence of his silence on the subject, assumes that the intention of the creator was that his trustee should be so restricted. If the investment clause permits a wider range of investment than that authorized under the Trustee Act, the Public Trustee exercises his discretion, and it appears that the income derived from moneys so invested by him averages 4 per cent.

Fees.

It should be added that the fees charged by the Public Trustee's department are not high, but, on the contrary, so low that it was supposed that they would prove unremunerative. This has not turned out to be the case, since the department has not only paid its way but will also have repaid out of current income expenses which in in any ordinary business undertaking would have been treated as a loan on which interest only was payable.

We have given these particulars because we believe that they will interest many medical men not only in their application to their own affairs, but particularly because the power of the Public Trustee in small estates and compensation cases is one which might more generally be exercised in the class of cases which come under the notice of doctors perhaps more frequently than any other members of the community.

The report (Cd. 5087) can be obtained through any bookseller, price 1d., or from Messrs. Eyre and Spottiswoode, East Harding Street, Fetter Lane, E.C., post free 1½d.

SCIENCE NOTES.

THE magnificent building erected by the Prince of Monaco to receive his oceanographical collections was already sufficiently advanced in 1902 to enable him to assign a very fine hall to the use of the meeting of representatives of the principal medical journals throughout Europe at which the International Committee of the Medical Press was founded. The delegates who then enjoyed the Prince's hospitality were greatly impressed by the immense scale on which the building had been planned, and the singular appropriateness of the site chosen, on the very edge of the sea, and with the harbour close at hand in which lay the steam yacht which the Prince had fitted out for deep sea work; dredges, and sounding and collecting tackle of many kinds were provided, and a large part of the vessel was devoted to laboratories fitted up with all necessary appliances for the immediate examination and for the preservation of the specimens obtained. An idea of the magnitude of the museum may be gained from the fact that it was only at the end of last month that the opening ceremony was held. It is built at the edge of the Rock of Monaco, and the architect, M. Delefortrie, who had to take down his foundations nearly to the foot of the cliff, has provided a number of rooms under the main floor almost down to the level of the sea. The main building of the museum is at the top of the rock, and the floor of the entrance hall is 160 ft. above the sea level. It leads into the great central hall, opening off which on either side are two other halls about 120 ft. long and 42 ft. wide. One of these halls is the conference chamber, the other forms part of the museum proper, and in it are displayed, in addition to specimens, examples of the apparatus and appliances used in oceanic research. On the floor above are two other halls of the same size as those below; these also will be used for the display of the collection. Below the entrance hall is a fine aquarium, part of which is already in use, and on the same level special arrangements have been made for watching and studying various phases of oceanic life. Below this, again, are laboratories for physical, chemical, and biological research. The decorations of the building have been designed to harmonize with its purpose, and above the principal façade are engraved the names of the ships of various nations which have been engaged in deep-sea research, including the *Talisman*, the *Challenger*, the *Valdivia*, and the *Hirondelle*. The opening ceremony was attended by representatives of many European Governments; the British Government was, the *Times* states, owing to some blunder, not included. The English representatives were Mr. J. Y. Buchanan (Royal Society), Dr. H. R. Mill (Royal Society of Edinburgh), Dr. Scott Keltie (Royal Geographical Society), and Professor Herdman (University of Liverpool). The opening address was given by the Prince of Monaco, and in the conversations which took place among the three hundred delegates from various countries present the need for international co-operation in oceanographical work on lines similar to the co-operation which exists among the North Sea powers was insisted upon, and it was suggested that the Prince might take the initiative in arranging for a congress to consider the possibility of such co-operation. It ought to be added that the work done by the scientific men in the Prince's museum and laboratories and in his ship is recorded in volumes of memoirs, with all the

advantages of beautiful printing and type and of the most exquisite illustrations in natural colours.

Minchin and Thomson have published a preliminary communication[1] on the transmission of *Trypanosoma lewisi* by the rat flea. They give an account of a careful and elaborate series of experiments conducted during the past year at the Lister Institute. These have had for their object the determination of the fact that the flea does actually transmit the trypanosome and the exact method in which such transmission is effected. There are two methods by which trypanosomes may be transmitted from one animal to another through the agency of insects, namely, the direct and the cyclical. In the former the process is purely mechanical, the proboscis of the insect becoming contaminated by biting an infected animal and the contamination being transferred to the blood of the next animal bitten. This process has obvious limitations, for the proboscis does not take long to become clean and the infectivity accordingly lasts only a short time or must be constantly renewed. In the cyclical method, however, the insect acts as a true intermediate host. A distinct phase of the life-cycle of the trypanosome is, and in fact must be, passed in the body of the insect. This phase takes a certain time to complete, and thus the infected flea only becomes itself infective after the lapse of a longer or shorter period. Once infected, however, it remains so for a considerable period, even, possibly, for the remainder of its life. Professor Minchin and Dr. Thomson have shown that in the case of *Trypanosoma lewisi* infection takes place by this second method, and that it is very unlikely that infection can occur by the simple mechanical method. After a non-infected flea has bitten an infected rat it takes at least a week before the flea becomes infective, or in other words, that part of the trypanosome life-cycle which occurs in the flea occupies a minimum period of six or seven days. It is further shown that the beginning of this period of the cycle consists in the multiplication of crithidia-like forms in the rectum of the flea. No account is given of the later changes. When a non-infected rat is bitten by an infective flea and the trypanosomes introduced into its blood they continue to multiply there for a period of twelve days. The authors make the rather suggestive remark that it may be only certain individual trypanosomes in the blood of the rat which are capable of producing a permanent infection in the flea. These results with regard to the method of infection agree in the main with those of Kleine in the case of sleeping sickness and tsetse-fly borne diseases of animals.

Many perplexing results have been the outcome of the study of the enteritis group of bacilli. A large number of forms belonging to this group have been isolated, but their properties are so inconstant that it is a matter of difficulty to be certain as to their individual identity. Recent experiments on the bacillus of hog cholera have shown that with the present means at our command it is not possible to make a distinct separation of the members of the group, morphologically, culturally, or by serum reaction, and that their differentiation is best effected by consideration of the pathogenic peculiarities of fresh strains. The possibility of change in the pathogenic character of certain organisms was brought into special prominence at the time when it was suggested that the mouse typhoid bacillus should be employed for the wholesale destruction of those pests. This bacillus was regarded as non-pathogenic in man, but the opinion gradually gained ground that this assumption was not safe, and that it was not justifiable to regard the pathogenic character of this particular organism as constant. The matter was further complicated by the discovery of non-virulent or saprophytic bacteria, indistinguishable from those of the enteritis group, and found in meat, milk, and faeces both of sick and healthy persons. It would appear, then, from consideration of the pathogenic relations of these bacilli that we cannot ignore the impression that the apparently opposed facts, the occasional human pathogenicity of mouse and rat bacilli and the saprophytic occurrence of enteritis bacilli possibly point to a common peculiarity—the inconstancy of the pathogenic properties of the bacilli of the enteritis group. This point has formed the subject of much research, and it has been found that the virulence of virulent strains is rapidly diminished by cultivation on agar, while, on the other hand, the virulence is rapidly increased by cultivation on sterile meat, blood agar, or ox serum. The method of passing cultures through animals has given contradictory results. By this means Trautmann got a decrease in virulence, but Koshe demonstrated an increase, while Xylander showed that there was an increase at first, and then a decrease. More recently Heuser[2] has found that by passing the bacillus of hog cholera through rats a certain degree of adaptability could be acquired and a distinct increase in virulence demonstrated. The rise in virulence and the increase in pathogenicity advance *pari passu*, and a decrease in both takes place at the same rate under unfavourable conditions—as, for instance, on artificial media. The toxins which are given off by the bacilli in culture media seem to facilitate the occurrence of infection with enteritis bacilli. From experimental feeding of mice with sterile meat, it would appear that very various circumstances—such as unsuitable nourishment, external injuries, cold, etc.—have a predisposing influence on susceptible individuals. There is a tendency at present to ascribe many of the effects of the enteritis group to concomitant filter-passing agents, such as have been demonstrated in the case of hog cholera; Heuser, however, does not deal with this aspect of the question.

[1] *Proceedings of the Royal Society*, March, 1910.

[2] *Zeitschrift f. Hygiene und Infektionskrankheit*, lxv, February, 1910.

LITERARY NOTES.

THE *Boston Medical and Surgical Journal* announces that it is proposed shortly to found a new journal wholly devoted to the record of the progress made in physiological therapeutics, including hydrotherapy, electrotherapy, massage, hyperaemia, etc. The *American Journal of Physiologic Therapeutics* will be published bi-monthly at 72, Madison Street, Chicago.

The centenary of the birth of Sir Samuel Ferguson has recently been celebrated in Belfast to the accompaniment of much appropriate oratory. Conspicuous by its literary finish among the tributes paid to his memory is the speech delivered by Sir John Byers at Victoria College on March 9th. He showed, with illustrations, what great men and women in every department of human activity the North of Ireland had produced, and in the field of poetry he mentioned William Drennan, Mrs. Alexander, Mary Balfour—who taught a school in Belfast, and who published translations from Irish—Mrs. M'Manus (who wrote *The Four Winds of Eirinn*), Moira O'Neill (Nesta Higginson, of Cushendun), Frances Brown (the blind poetess), and Sir Samuel Ferguson. Sir John then gave a short account of Ferguson's life, specially in relation to the North of Ireland, and mentioned some interesting new points as to his northern friends—Thomas O'Hagan (afterwards Lord Chancellor of Ireland), Dr. Robert Gordon (a doctor at Bellaghy, who succeeded the famous Lever at Portstewart, where the latter was dispensary doctor), and General Chesney, of Pakolet, Kilkeel, County Down (the man who by his survey of the Isthmus of Suez made practicable the cutting of the canal by De Lesseps). In discussing what Ferguson had accomplished in his life, Sir John referred to him as a man of letters, as an antiquarian, a musician, and as one with a thorough practical knowledge of art. Ferguson as a literary author gained distinction in both prose and verse, while as an antiquarian he was influenced by three important factors—first, his early environment round Donegore, a district rich in antiquarian remains and natural scenery; secondly, by his appointment as deputy keeper of the Record Office (where he had access to the originals of many important old documents); and, thirdly, by his Continental visits, during which he examined the museums and employed his time in discovering remains of the old Irish missionaries and scholars, who as early as the fifth and sixth centuries had gone forth from their native country, Ireland, full of learning of every kind. All these circumstances inspired Ferguson to look into the old and forgotten manuscripts and writings, and by his successful efforts to create poetry dealing largely with subjects taken from these old documents he had inspired amongst others an intelligent study of the history, antiquities, and ancient laws of his country.

SICKNESS AND INVALIDITY INSURANCE.

SECOND ARTICLE.*

FROM the detailed description given last week of the various forms of sickness and invalidity insurance in Germany, it may well be inferred that Germany has for many years regarded insurance as a prophylactic against pauperism. In practice, however, it is hardly possible to prove from statistics that there has been any recognizable decrease in pauperism as a result of compulsory thrift. The percentage of pauperism has in fact risen, and it is unfortunate that the insurance often fails to reach the lowest and least provident classes, especially the casual labourers. In their case there is no regular employer who can be held responsible for the payment of the employers' share of the premiums, and the labourers themselves can hardly afford to pay their own share, while the State subsidy for invalidity and old age pensions is only given when a pension has actually been granted. Thus when sickness or invalidity comes there is nothing left for this class but recourse to the Poor Law. Moreover, the invalidity pension alone is hardly sufficient in many cases, and has to be supplemented by Poor Law relief. Taking the whole country, the rate of wages has risen during the last twenty years, without reckoning the amounts that employers have had to subscribe to insurance for their men, which in a sense must be regarded as an addition to wages. At the same time it seems safe to assume that but for the insurance the rise in the rate of pauperism would have been greater than it has. The explanation of the rise in the pauper rate must be sought in other directions. The German system of insurance is quite unique; other countries have imitated it only to a slight degree for sickness and accidents and old age, but no other country has yet made invalidity insurance compulsory, except in the case of one or two special trades, such as miners and seamen; it has, as a rule, been left to voluntary associations, which are no more successful in reaching the lowest classes of casual labourers than the compulsory insurance.

FRANCE.

The attitude of France towards insurance until recently has rather resembled that of Great Britain than of Germany. Although the French people are naturally more disposed than the English to be thrifty, it must be confessed that the State has made greater efforts to foster thrift in France than in England. Within the last fortnight, however, the French Senate and Chamber of Deputies have passed a compulsory old age insurance scheme on distinctly German lines. It is most significant that the French Socialist party has supported a compulsory contributory scheme quite opposite in principle to the non-contributory system of old age pensions in England. The new French scheme only touches invalidity to a certain extent, and it may be said that France has no compulsory insurance for sickness, accident, or invalidity that deals with more than miners and seamen. The population of France is about 39,000,000, and it is computed that there are about 9,500,000 wage workers. The principle on which France has acted for the bulk of these workers has been rather to offer various inducements to insure rather than to make insurance compulsory, but the recent enactment almost seems to show that it has been acknowledged that nothing short of compulsion is adequate.

Sickness Insurance.

For ordinary wage earners in France sickness insurance is quite voluntary, but since 1894 it has been compulsory on miners and quarrymen earning up to about £100 a year. This is organized mostly by special miners' sick clubs, which number about 200, and have something like 200,000 members. In most cases employers contribute one-third and the workmen two-thirds of the subscription, as in Germany, but the benefits are generally confined to sick pay and funeral expenses, no medical attendance nor hospital treatment being provided by the clubs.

Accident Insurance.

Accident insurance is only compulsory for seamen. The law of 1898 created for the benefit of French mariners a national State-controlled organization, providing for the risks and accidents of the seamen's calling. The employers subscribe half the premium and the men the other half, and the benefits are: Sick pay up to six months after the accident; a pension for those permanently invalided, which varies from about £8 to £12 a year; and in case of death as a result of the accident, surviving dependents may be awarded a pension of from £7 10s. to £10.

For all other classes of workmen accident insurance is voluntary, but, without being actually compulsory, the State has contrived to make it practically universal by several indirect provisions. Under a Liability Act employers may have to pay compensation to workmen engaged in building, factories, mines and quarries, in loading and unloading goods, and in certain other occupations, and by a law of 1906 a similar provision was extended to employees in commercial establishments. Compensation has to be paid if disablement lasts for four days. It has, however, been enacted that employers shall be released from all other liabilities if they insure their workmen in a recognized insurance office which provides medical care and at least half wages. There is a further provision that if the employers do not thus insure their workmen they are compelled to contribute to a State fund, so that in case of insolvency the workmen may not be deprived of legal compensation. Thus the workmen are properly protected, while the employers are allowed to choose their own way of meeting the obligation. The State funds are, however, very little used, and employers' mutual associations or general accident insurance companies have greatly increased. It is to be noted that the employers' associations are worked very economically, the administration expenses being often no more than 5 per cent. of the total expenses. The indemnity for absolute and permanent disablement is two-thirds of the wages, and for temporary disablement one-half the daily wages. A widow gets 20 per cent. till she marries again, and then a lump sum equal to three years' wages, while orphans have 60 per cent. until they are grown up; medical attendance is also provided, and funeral expenses up to about £4.

Invalidity and Old Age Insurance.

As with sickness and accident insurance, the policy of France has been rather by holding out various inducements to encourage invalidity and old age insurance than to make it compulsory. Until recently, indeed, invalidity insurance has only been compulsory for seamen and miners earning up to about £100 a year. This insurance is organized under State control; seamen contribute themselves to the fund, and the State adds a substantial subsidy to the pension which is paid after the age of 50; widows and orphans receive half the pension. For miners there are miners' pension funds to which employers and men pay in equal shares, the pension being provided after the age of 55.

In addition old age pension insurance has been open to all citizens on a voluntary plan administered by the State. The premiums are paid by the insured, but the State adds a subsidy to each pension up to one-fifth of the amount insured. The pension becomes payable after the age of 50, but for earlier disablement there is an invalidity pension; the maximum is about £50, but the amount varies according to the premiums paid; in case of death before the pensions are payable the subscriptions are reimbursed.

The old age pensions bill which has been before the French Parliament for the last three years or more was on February 12th unanimously voted by the Senate in a form very different from that in which it was originally drafted. The original scheme made no satisfactory provision for ways and means, and the Government announced that for financial reasons it was impossible to consider amendments by which farmers and agricultural labourers should be on the same footing as workmen in the towns during the transition period. It seems to have been assumed all along that an increase in the succession duties would be earmarked for the purpose, but the estimated income from the succession duties is only about £4,160,000, and the Government requires about a third of this for other purposes. The Socialists protested against the diversion of any part of these duties

* The first article was published in the JOURNAL of April 2nd, p. 818.

to other purposes, as they considered them the most fitting source of the old age pensions. Objections were made to this earmarking of parts of the revenue for special purposes, but nevertheless the Chamber of Deputies at the end of February modified the bill so as to keep the succession duties for the pensions, and the Government may be compelled to raise another £1,500,000 over and above the sum expected already from these duties. This specialization of the succession duties is significant, as it means that the pensions are partly imposed as a specific charge on the propertied classes of the community. Only on this condition was the Socialist party ready to acquiesce in the scheme being made a contributory one, and the Labour Confederation was by no means satisfied that workmen should be called on to contribute so much as 9 francs a year. As at present arranged, industrial workers in towns will get during the transition period a pension of £4, while farm labourers will only get £1 12s. It was argued that living is much cheaper in the country districts, but the rural representatives demanded that if the funds did not allow of £4 all round, the towns and country should at any rate be on an equal footing, and that £2 8s. all round might be paid. Employers, too, are complaining of the necessity under which they will be put to contribute the same premium as the men contribute, which, even in the case of men earning no more than 1½ francs a day, will amount to 9 francs a year. The Marxist Socialists opposed the contributory system to the last, but the bulk of the Socialists agreed to it on the conditions stated above. These details are given merely to show what appears to be the general feeling in France as to the responsibility for old-age pensions. Germany has recognized for the last twenty years that for this purpose there is a moral responsibility resting on the State, on employers, and on the insured themselves—in other words that self-providence must be insisted on, but that employers have a special responsibility, as they must contribute first directly and again indirectly through the taxes. Exactly the same feeling has been shown in France, as the old age pensions bill was carried on March 31st in the Chamber of Deputies by a majority of 564 votes to 4. The wage earning classes under compulsion to insure will number roughly 11,500,000; they are the workers in every trade, artisans, domestic servants, agricultural labourers, and State servants who do not belong to any superannuation fund. In addition to these about 6,000,000 other workers though not under compulsion may insure if they like and obtain the State benefit. These include peasant proprietors and persons in business for themselves but employing only one or two workmen. The contributions will be for men 9 francs (about 7s. 6d.) a year, for women 6 francs (about 5s.), and for persons under 18 years of age 4½ francs (about 3s. 9d.). Employers will have to pay the same amount for each worker, so that the worker's receipt book will show a total contribution for the year of 15s. for men, 10s. for women, and 7s. 6d. for minors. The full pension to be thus provided will be about 6s. a week after the age of 65, that is about £15 10s. a year, including the subsidy of £2 10s., which the State will provide to each pension. This is far better than the old age pension in England, wholly provided by the Government, which is only at the most 5s. a week after the age of 70. The full pension of 6s. will not be payable until after thirty years' subscription, and in order to show some immediate results, it is provided that in the meantime workers of 65 and over will receive a small annuity of not over £4 in the towns and £1 12s. for agricultural labourers, and to meet this the French Government will have next year to provide about 5½ millions sterling.

Friendly Societies.

The official report of the work of the friendly societies shows that voluntary insurance for sickness is extensively used in France. At the end of 1906, there were 13,575 approved adult friendly societies with nearly three million benefit members, an increase in the year of about 350,000 members. During the last six years the total membership has been about doubled. The average payment per sick person during the year was 22s. 10d., or 1s. 1d. per day of sickness. The number of cases of sickness was 542,897, and the expenditure for these was £385,924 for sick pay, £189,959 for medical fees, and £224,389 for pharmaceutical expenses. The old age pensions provided averaged £3 0s. 6d. a year, and funeral expenses £2 16s. 3d. Pensions are also provided for widows and orphans, and about 4,000 members received a pension for infirmity.

In addition to the adult societies there are 2,298 school societies with 696,465 school children members. These societies also provide sick pay, medical attendance, and funeral expenses, and the subscriptions cover a contribution towards old age pensions.

The National Bank for Old Age Pensions (*Caisse Nationale des Retraites pour la Vieillesse*) provides 55,000 pensions averaging £3 18s. 3d. each out of its common fund, 18,850 averaging £3 1s. 1d. out of the interest on the common fund, and 71,650 averaging £3 0s. 6d. from the unattached funds. The friendly societies are also authorized to establish pensions by "individual books" with the help of the *Caisse Nationale*, and this is largely taken advantage of by the sick societies.

In addition to the above there are also 3,224 free societies, with 415,641 benefit members. These societies provide sick pay, medical assistance, funeral expenses, and distress relief for widows, orphans, and the aged.

The total subventions to friendly societies allocated during the year 1906 by the State, the departments, and the communes amounted to £371,949. This alone shows that though sickness and invalidity insurance is not compulsory in France, except for miners and seamen, it has received the greatest encouragement from the State, the departments, and the communes.

Medical Attendance.

We are here only indirectly concerned with the public provision for pauper relief in France, but in the event of sickness and invalidity insurance becoming compulsory in England, the methods of providing medical attendance used in France under the law for l'Assistance Obligatoire and the law for l'Assistance Médicale Gratuite will deserve careful consideration, and some description will therefore not be out of place.

The law of 1893 for l'Assistance Médicale Gratuite provides that every French sick person who is without resources shall receive gratuitously from the commune, the department, or the State, according to his place of settlement (*domicile de secours*), domiciliary medical attendance, and similar arrangements are made for women at confinements. Hospital treatment is also provided, but great preference is shown for domiciliary treatment, partly on the plea that it is cheaper, and partly because it tends more to make relatives look after their own sick. Accordingly, before hospital treatment is given there must be a medical certificate, countersigned by the president of the Bureau d'Assistance, stating that it is impossible for domiciliary treatment to be given with advantage. Each commune is attached to one or more of the neighbouring hospitals or hospices for this purpose. The authorities are enabled to recover the cost of treatment from all persons or societies or from other public authorities liable to provide it. In each department there is organized under the authority of the prefect a medical service, and the General Council deals with the conditions of the service and determines under the law what part of the expenses shall be borne by the commune and the department respectively. Habitual residence for a year and other conditions have to be complied with to obtain a settlement (*domicile de secours*), which confers the right on indigent persons to claim medical attendance from the commune or department; persons having no such domicile in a commune or a department are treated at the expense of the State. The medical assistance is assured by a Bureau d'Assistance, with an administrative committee formed by the joint committees of the hospices and the Bureau de Bienfaisance. The committee meets at least four times a year, and a month before the first ordinary session of the municipal council makes out a list of persons eligible to receive medical assistance. The committee is assisted in this by the doctor of the district or a delegate of the doctors, if there are several, and the list is revised a month before each of the three other sessions of the council. The council deliberates on the list in private and when sanc-

tioned it has further to be submitted to the prefect of the arrondissement, who satisfies himself that all formalities have been carried out, and when thus finally sanctioned the list remains in force for a year. For cases of urgency, in the intervals between two sessions, the Bureau d'Assistance can admit provisionally any person not on the list for medical attendance; if the bureau cannot meet in time to do this, the mayor can give an order for attendance though he has to explain the case at the next meeting. The ordinary expenses of the service are the fees of the doctors and midwives, the cost of medicines and appliances and the cost of hospital treatment; these are provided by the commune, the department, and the State, in proportions decided by law and depending mostly on the *domicile de secours* of the persons on the list. Extraordinary expenses such as those entailed in building or enlarging hospitals are subscribed to by the State, a lump sum being voted in the budget for each year. The State also, in addition to bearing the cost for all persons who have no communal or departmental *domicile de secours*, defrays all the cost of administering the law.

A later law of 1905 provided, in addition to l'Assistance Médicale Gratuite, assistance for the aged over 70 and for persons under 70 who are suffering from infirmity or incurable disease and who are without resources. Similar formalities have to be complied with as under the earlier law in drawing up the list of persons eligible for assistance. Here, again, home assistance is in all cases preferred; it usually takes the form of a monthly pension of not less than 5 francs nor more than 20 francs; the cost is met by the communes, the departments, and the State, according to the *domicile de secours* of the persons relieved. The measure is a Poor Law measure, and is non-contributory, the Bureau de Bienfaisance being the authority for carrying out the arrangements.

The medical service for l'Assistance Gratuite is organized by the departments, as the communes are too small, and the State is thought to be too remote from local conditions to be able to meet the varying needs. The department is an intermediate unit, and as the prefect can well represent both the communes and the State, the service is placed under his authority. As an example, the rules of the Oise Department may be taken; it has a Departmental Committee, consisting of the prefect (chairman), four members of the General Council, three doctors chosen by the whole of the doctors of the local service, two pharmacists chosen by the pharmacists of the service, and four persons named by the prefect and preferably representing the hospitals and hospices or the Bureaux de Bienfaisance; another important member of the committee is the Inspecteur des Enfants Assistés, who, under the authority of the prefect, acts as a general inspector of the whole district. There is no uniform system of organization imposed by law, as it was thought better to leave details to the general councils of the departments. The three following systems, or combinations of them, are in use: (*a*) La Médecine Cantonale; (*b*) La Circonscription Médicale; and (*c*) the Landais system, or as it is more commonly called, the Vosgien system, as it was brought to the greatest perfection in the Vosges.

La Médecine Cantonale.

Under this system the prefect chooses for each canton a single doctor for the service, who receives an allowance in accordance with the area of the district and the number of poor persons that he may be called on to treat. He is the only doctor to whom patients can apply, and he is under contract to give his services to all the sick poor on the list. He is thus the official medical officer, and all his *confrères* are excluded from the service. This system was first started in Alsace; it received the commendation of the Academy of Medicine in 1833, but in 1845 it was condemned by the Medical Congress. It is to-day an object of the strongest criticism both by the great majority of the medical societies and by a large number of political bodies; at an inquiry in 1872, when an earlier law was in force, only nine departments were in its favour, and it is no less in disfavour under the later law. It is urged against it that it destroys the independence of the doctors and the liberty of the patients; it makes certain doctors servants of the prefects and mayors, and no less servants of the patients, and opens the door to privilege and intrigue. The patients complain that they cannot have the doctor of their choice, but must have one in whom they may have no confidence. The monopoly also destroys professional concord. To ask a doctor to sacrifice a private patient to go and see an indigent at the far end of the canton is to place him between his interests and his duties, and it often asks for an effort to which human powers are unequal.

La Circonscription Médicale.

To get over the difficulties of the cantonal system just described *circonscriptions* were made; that is, districts corresponding as far as possible in their limits to those of the ordinary areas covered by doctors for their private patients; and all the doctors in each *circonscription*, on accepting the terms offered, may be doctors of the service. This gets over the inconvenience of having two jealous categories—official and non-official doctors.

The Vosgien System.

The Vosgien system rests on the following basis:

1. Free choice of doctor by the indigent sick.
2. Freedom of the doctor.
3. Remuneration of the doctor in proportion to services rendered.

In this system all the doctors and pharmacists and midwives who are willing to accept the terms offered can take part in the departmental service. The methods of payment and the rates vary considerably in the different departments.

Methods of Remunerating the Doctors.

Under both Circonscription and the Vosgien systems two methods of payments have been adopted: (1) *Par Abonnement*, and (2) *à la visite;* the latter has for long been preferred by medical men.

1. *Payment par Abonnement.*—This method of payment by contract is not favoured by the profession, but is still retained in some departments. It is carried out in one of two ways, according to whether the authority in making up its budget for medical fees reckons (*a*) so much for each inhabitant, or (*b*) so much for each indigent person.

(*a*) In the first case, a sum of from 10 to 15 cents. is allowed in the communal estimates for every inhabitant, whether indigent or not, on the last quinquennial census roll. Taking, for example, a commune of 1,000 inhabitants, and allowing 10 cents. a head, we get a sum of 100 francs set aside for medical fees. At the beginning of each year every indigent person who is on the list for free medical attendance has to notify his choice of doctor for the year, and he cannot change during that year, though the doctor can, if he give notice within a certain time, decline to have any particular person on his list. The total sum set aside (100 francs) is then divided among the doctors in proportion to the number of indigents on their lists. Thus, if there are two doctors and 50 indigents in all, and if Dr. X. has 40 of them on his list, he will get forty-fiftieths of the 100 francs—this is, 80 francs; while Dr. Y., having only 10 on his list, will get ten-fiftieths—that is, 20 francs. These sums have to cover all necessary attendance to the persons on the lists during the whole year.

(*b*) Another plan is to reckon only the indigent persons, not the whole of the inhabitants, and to allow a certain sum for each indigent. A commune, for instance, having 100 indigents on its list, will set aside a sum of 3 francs for each, that is a total of 300 francs; and, as in the previous case, this sum is divided among the doctors in proportion to the number of indigents on each doctor's list. Theoretically this might seem a better plan than reckoning for each inhabitant, as some districts have a much higher rate of pauperism than others, and the pauper rate may change considerably without the fee for each inhabitant being changed. But as will be seen from a note from a special correspondent in France published in this issue, some of the mayors of communes only put names of indigents on the list when they actually become ill, so that the sum total for the year was reckoned, not on the total number of indigents, but only on the number of indigents actually sick. The legality of this was very doubtful, but it might be very difficult to prove anything wrong in particular cases, as it would often happen that persons only become indigent when their wages have

ceased through illness. In any case it was very hard on the doctors; it was like having a club in which all the members were sick, and yet each only paying a miserably inadequate annual fee. The fee allowed in some departments was 3 francs—that is, about 2s. 6d. a year each. If this had been actually paid for every indigent person sick or well it would still have been regarded in England as the very cheapest form of club practice; but when, as our correspondent shows, it was only paid for those who were sick to begin with, and might require a whole year's attendance, one can hardly imagine that medical fees could possibly descend much lower. It was only after what amounted to a threatened strike that the system described under (*a*) above was substituted in most departments—that is, the system of allowing a small sum for each inhabitant whether indigent or not; but the system of paying for each indigent is still retained in some districts.

In many departments the prefect names one or two doctors to a *circonscription* for a period of from one to five years, and they are paid a fixed salary according to the size of the district. The salaries are often ridiculously low, 100 to 400 francs being common, and salaries of 1,000 francs, that is, a little over £40, a year extremely rare. Operations are also paid for at specially low rates, and midwifery varies from as low as 5 francs to 20 francs; perhaps the average for all the departments is 10 francs for simple cases and 20 francs for operative midwifery.

2. *Payment "a la visite."*—The system of payment for each visit is generally preferred by the medical men in spite of the fact that the fee is, as a rule, very small. In some places the patients have to choose their doctor at the beginning of the year but in others at the commencement of an illness, and they cannot change without permission of the prefect. In by far the greater number of departments the fee allowed is 1 franc for a day visit with mileage, both fee and mileage being generally doubled for night visits. Consultations in the surgery are often not paid for at all though they have to be given, and it is quite common for only 50 centimes to be allowed. In places where there is a dispensary provided and there are several doctors there may be a rota, and the doctor attending is paid generally "*par vacation*," and rarely for each case seen. Although, as stated above, the average fee for a visit is 1 franc, different departments have different ideas of what is a proper amount, and the way in which mileage is reckoned often makes a considerable difference. In one department only 75 centimes is allowed for a visit (about 7d.), and as mileage an extra 75 centimes per kilometre over the first kilometre, only reckoning distance out and not return; 50 centimes is allowed for consultation at the surgery and double fee for night visits, though night is only reckoned from 10 p.m. to 5 a.m. This is perhaps the worst case of all. In another department 2 francs are paid for the first visit and 1 franc for subsequent visits. Mileage payment is very variable, ranging from as low as 15 centimes to 1 franc per kilometre. Sometimes no mileage is allowed for the first one or two or three kilometres, but in most cases it begins after the first kilometre, or it may be only for cases outside the commune. In some cases it is only paid one way, but in other cases both ways. The authorities, however, are always careful to provide that if there are several patients to be seen at a distance in the same direction, mileage is only allowed for one. Also where patients have choice of doctor, if they choose a distant doctor, he has to sacrifice some mileage if he cares to attend, as the mileage is only from the patient's home to that of the nearest doctor. As stated above, night visits are paid double, both the fee for a visit and the mileage being doubled, but it would seem as if the nights were very short in France, as it is quite common to find night defined as from 9 or even 10 p.m. to 5 a.m. in summer and from 8 or 9 p.m. to 6 or 7 a.m. in winter. The doctors have on several occasions had to submit to a proportional reduction of the fees expected if the funds voted for the purpose were not found sufficient to meet the charges and if the number of visits during the year had been unexpectedly high. The doctors' accounts are verified by a special commission, which includes five members named by the doctors of the service. The department has to pay pharmacists for all medicines supplied on the doctors' prescriptions, and the midwives of the service are paid fees varying from 5 to 15 francs, but averaging about 10 francs, including subsequent visits.

From what has been said it will be seen that the methods of remunerating the doctors under l'Assistance Médicale Gratuite vary considerably in different parts of the country; payment by fixed salary of part-time medical officers, payment by an annual fee for each indigent on the list, payment reckoned at so much a head of the whole population of the canton or other district, and payment for each visit are all in use, though the last is by far the commonest. In a circular to the departments the French Minister of the Interior pointed out that from the public point of view there is an objection to payment *par abonnement* in that the number of cases sent to hospitals tends very seriously to increase, while the objection to payment for each visit has been that the number of visits made may be unnecessarily multiplied, and a satisfactory way of meeting the last objection is much to be desired.

THE PREPARATION OF SOUR MILK.

Insemination in Series.

In a letter published in the Journal of January 1st Dr. T. D. Luke recommended the regular preparation of soured milk by carrying forward a small portion of the previous day's culture, and, in a letter which appeared the following week Dr. G. Herschell expressed strong disapproval of such a practice. It was pointed out at the time that this is the plan regularly followed in Turkey and Bulgaria, and a short account will now be given of some experiments which have been made for us in regard to the point at issue.

In every culture in the whole series of experiments the milk employed was first sterilized by bringing it to the boil over a direct gas flame and boiling for about half a minute, then immersing the vessel containing it in boiling water, and keeping this water vigorously boiling for one hour; the milk was then cooled to about 45° C. (113° F.), the bacterial culture added, and the vessel placed in a large pan of water kept at about 45° C. The pan of water was heated by means of a small gas flame; no thermostat was used, and the temperature was purposely allowed to vary as it would be likely to vary in the domestic preparation of the sour milk, for example, from alterations of gas pressure, changes in the general temperature of the room, and so on; during the course of the experiments variations from such causes amounted to about 7° or 8° C. (12° to 14° F.) The vessels used were glass flasks, closed with plugs of cotton wool; but no more precautions were taken to avoid chance contamination with foreign organisms than can be and should be observed in the kitchen; cultures were often left exposed for a short time, thermometers or glass rods to be dipped in the milk were not sterilized, etc. The reason for not taking greater precautions was, of course, a desire to test fairly the results of continually carrying forward a portion of each day's culture, as it could be performed in the domestic preparation of the product.

The "Sauerin" Tablets supplied by Messrs. Allen and Hanburys were employed for the first culture; the proportion used was four tablets to a pint of milk, and the culture was examined after twenty-four hours. In all the tests mentioned below the amount of acid formed was determined by titrating a portion of the milk with standard alkali, using litmus paper as indicator; neutrality was regarded as having been reached when red and blue litmus paper were equally affected in opposite senses, this amphoteric behaviour being characteristic of a lactate; this was found more satisfactory than the use of phenolphthalein.

In the first culture 0.18 per cent. of lactic acid was found after twenty-four hours' incubation, and microscopical examination showed the presence of abundance of the characteristic rod-like bacilli. Fresh portions of milk were then inseminated with this culture, 1 part of the latter being added to 60 parts of milk; in later cultures (except where otherwise stated) the proportion used was 1 to 70, or about one teaspoonful to half a pint. Curdling was rather slow at first, and the second cultures were

incubated for forty-five hours before testing; two samples of milk were employed, one being obtained directly from a farm, and the other bought from a London dairy company; the amounts of lactic acid developed in these were found to be respectively 1.25 and 1.45 per cent.

Further portions of milk were then inseminated with these cultures and incubated for twenty-four hours, and fresh portions from these again, and so on; the results soon attained a practically constant value, 1.8 per cent. of lactic acid being developed in twenty-four hours. At first two series of cultures were carried on, one with milk obtained directly from the farm, and the other with the milk from the shop; but the small difference at first found soon disappeared, and the products were identical in the two cases. The series was prolonged with the farm milk only, but occasionally the shop milk was used instead without any variation being observed. Each successive culture was incubated for about twenty-four hours and then tested, and 1 part was added to 70 of sterilized milk for the next culture; as there was no attendance in the laboratory on Sundays, the culture put on each Saturday was incubated for forty-eight hours. Thirty successive cultures were made; this series extending over nearly six weeks, but no variation in the character of the product was observed. The amounts of lactic acid formed, without any important variation, were, in twenty-four hours, 1.8 per cent.; in forty-eight hours, 2.25 per cent. A soft thick curd was obtained, which readily mixed with the separated whey on stirring or even on gently shaking the vessel containing it; this was perfectly free from bitterness or any suggestion of rancidity, and was highly palatable; the only alteration in character or taste that was observed was that in two out of three series of tests the *earliest* cultures gave a harder curd with a slight flavour of rancidity, but these undesirable properties disappeared with successive cultivation. The product was examined microscopically from time to time, and the rod-like bacilli were always found in abundance without any other form being observed; the only alteration was that in the later cultures the rods were joined in much longer threads than in the earlier ones.

The results described appear to show that a very satisfactory product can be obtained by the insemination of each day's supply from that of the previous day, provided that (1) the milk is properly sterilized before insemination, and (2) incubation is carried on until a strongly acid product, containing a vigorous growth of the organisms, is obtained. It is probable that if the milk were inseminated with a feeble culture, other organisms which might obtain access to it would have a better chance of developing and possibly ultimately supplanting the Bulgarian bacillus; but if the latter is kept in a vigorous state, it is itself a good safeguard against other organisms.

At one stage of the series of successive cultures described above, the temperature was allowed to rise for a few days to about 48° C. (118°); the formation of lactic acid diminished to 1.13 per cent. in twenty-four hours, and 1.34 per cent. in forty-eight hours. On restoring the temperature of about 43° C. (107° F.) and continuing the successive cultures, the amount of lactic acid rose again to the former figure of 1.8 per cent. in twenty-four hours.

When the dried bacilli contained in tablets are employed, the production of lactic acid is slow, and curdling does not usually occur in less than about twelve hours, but when fresh liquid cultures are employed, curdling occurs after a much shorter time, and in the tests described, where one part of a twenty-four-hour culture was added to seventy of milk, the product was thoroughly curdled after about five hours. In a paper by Mr. E. Quant in the JOURNAL of December 18th, 1909, four hours is mentioned as the time requisite for curdling when a liquid culture was employed, and Dr. T. D. Luke, in the letter already referred to, states that curdling was regularly obtained in about five hours when the milk was inseminated with the previous day's culture. Dr. Herschell, on the other hand, regards curdling in five hours with suspicion, and states that the Bulgarian bacillus takes far longer to produce this result. The actual curdling, however, is merely due to the presence of a sufficiency of acid, and is not directly effected by any organism; and it is obvious that the amount of lactic acid produced in a given time will not be constant for a particular organism, but must depend on the greater or smaller number of organisms present. To prove this by actual experiment, a quantity of sterilized milk was divided into four portions, to which a previous culture (containing 1.2 per cent. of lactic acid) was added in the respective proportions of 1 to 280, 1 to 70, 1 to 30, and 1 to 7. The fourth of these was curdled in less than an hour and a half, and the product then contained 0.15 per cent. of lactic acid; the third was curdled in three hours, and the product then contained 0.16 per per cent. of lactic acid; the second was curdled in four hours, and the product then contained 0.14 per cent. of lactic acid; the first was curdled in seven hours, but the product then contained 0.26 per cent. of lactic acid. The last result appears to suggest that the longer time had allowed some slight change to occur in the casein, so that a rather higher proportion of acid was necessary to induce curdling.

A correspondent of the JOURNAL having stated that he was unable to obtain curdling when fresh milk was treated with "Sauerin" tablets, whereas the same milk which had been kept for twelve hours before treatment gave a satisfactory product, some experiments were made to see if this result could be confirmed. Fresh milk was obtained while still warm from the cow and divided into two portions; one portion was sterilized two hours after milking, and then inseminated with "Sauerin" tablets; the other portion was similarly treated twelve hours after milking. The experiment was repeated with another lot of milk on a subsequent occasion. In both cases the milk which which was treated within a short time of milking showed a larger production of lactic acid than the other, the amounts after twenty-four hours' incubation being:

	I.	II.	
Milk treated two hours after milking...	0.19	0.18	per cent.
Milk treated twelve hours after milking	0.07	0.13	,,

It appears, therefore, that some other explanation must be found for the difficulty experienced by the correspondent in question, and so far as these tests go they indicate a distinct advantage in treating the milk when quite fresh, which is what would be naturally anticipated.

MOTOR CARS FOR MEDICAL MEN.

THE ADVANTAGES OF ONE-CYLINDER CARS.

DR. T. W. HEYWOOD (Darwen) writes: Being the owner of a single cylinder car, I should like to bring before your inquirers the value of my 6-h.p. Rover car, duplicates of which can be bought for £155 complete. I have had one in daily use since June last and it has never failed me. Of course I have the inevitable tyre troubles, but no mechanical trouble. It will go almost anywhere with two passengers. In July I went to Bristol with it, and drove there within a week of purchasing without any knowledge of mechanics. As it is small I have no difficulty in turning in narrow streets. Tyres are cheaper than on a large car and petrol consumption low. A few days ago I went 170 miles with it over the Westmorland Hills in the Lake District, doing over 28 miles to the gallon of petrol, which I think remarkable for the distance. On a good level road I have got 25 miles an hour, and had a little to spare. For any one who wishes a reliable small car I would recommend a 6-h.p. Rover, especially to the man who does his own driving.

THE Health Committee of Glasgow Corporation has resolved to convert a small pavilion at Ruchill Fever Hospital containing two wards into an observation ward capable of accommodating thirty patients.

THE tenth annual report of the Westmorland Consumption Sanatorium at Meathop is a record of continued advance. Two chief additions to the work of the institution are the Home for Advanced Consumptives, built close to the sanatorium, and the provision which has been made for the continuance of school work by the children resident in the sanatorium as patients. The tables showing the present condition of former patients are interesting. Of 120 cases, classified on admission as suffering from an obviously dangerous amount of consumption and yet not too far advanced to be beyond fair hope of recovery, 60 per cent. are now in excellent health, whilst of 75 early cases 90 per cent. are in robust health. Only 1 of the early cases has died in the course of the ten years, and of the 20 deaths which have occurred in that time amongst the more advanced cases, the majority were amongst those admitted during the first three years of the sanatorium's existence. It is noted that nearly all cases of children of school age admitted to the sanatorium show marked benefit from treatment.

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THE ASSOCIATION AND THE TREATMENT OF SCHOOL CHILDREN.

In commenting last week upon the deputation representing the British Medical Association and its Metropolitan Counties Branch which had an interview with the medical officer and other representatives of the Board of Education, we dealt chiefly with general principles, but in the same issue there was published in the SUPPLEMENT the detailed scheme drawn up for Wandsworth by a special committee of the Division and adopted at a meeting of the registered medical practitioners resident and practising in Wandsworth. The scheme has been worked out in accordance with the fundamental principles declared by the Representative Meeting of the British Medical Association to be its policy. One of these principles is that the reference of school children, found upon medical inspection to be defective, to public medical charities for treatment, whether or not accompanied by payment or subsidies, should be opposed, and that their reference to the Poor Law should be equally opposed pending such reforms as may be carried out as the results of the reports of the Royal Commission on the Poor Law. It was further declared that under existing conditions the most satisfactory provision for the treatment of such children is to place them under the care of private practitioners, who should discharge their duties at a convenient centre, payment for such services being made on a scale agreed upon between the local medical profession, as represented by the Division of the British Medical Association, and the local education authority.

The schemes adopted in Wandsworth and in Norwood are nearly identical, such differences as exist being mainly in minor matters of detail. The first point to be noted is that the scheme is to be carried out by committees under the direct control of the Division, and, in order to meet the present arrangements of the London County Council, the treatment will be limited to diseases of the ear, eyes, and throat. At Norwood it is proposed to accept 300 skin cases, chiefly ringworm; among skin diseases, Wandsworth refers only to the last mentioned, which is to be treated only at the houses of local doctors. At present, for the reason mentioned, dental treatment will not be provided, but the scheme is so framed as to allow of the necessary expansion when the London County Council finally resolves to undertake this important part of the curative and preventive treatment of disease and degeneration in childhood. Both the Norwood and the Wandsworth schemes propose a single centre in a convenient situation, but the meeting at Wandsworth expressed the opinion that a single centre would turn out to be insufficient. The number of children which it is estimated will have to be treated annually in both districts is about 1,500, between half and two-thirds in either place being probably cases of eye disorder. The number of the staff will be determined in each locality according to the anticipated requirements. The staff will be appointed annually from the medical profession resident and practising within the area, each member of which will be invited, if he desires to be appointed, to forward an application stating his qualifications for the appointment. If more than a sufficient number of suitable applications are received the Executive Committee of the Division would appoint a special selection committee, consisting of an equal number of members and non-members of the Association not resident in the electoral area, to select the staff, and the selection would be subject to the approval of the medical officer of the Education Department of the London County Council. Each officer would be appointed at the end of the school year (about July 21st); he would hold office for one year, but would be eligible for re-election. If more than a sufficient number of applications were received in the second and following years, those who had not already held a post would, if suitable, have a preference over previous holders. The scheme will be managed by two committees. A House Committee formed of five local doctors not members of the staff, but resident and practising within the area, together with the chairman of the Division and the chairman of the staff committee *ex officio*. The five local doctors would be elected annually in June by the medical men resident and practising in the area by nomination and voting through the post. The election would be conducted by the Executive Committee of the Division. The second committee would be a committee of the staff. When a prescription is necessary, it will be given to the child or its parents, and arrangements will be made for dispensing at reduced charges by approved chemists, who will return the prescriptions to the clinic. In Wandsworth the House Committee, at the request of the London County Council, proposes to obtain the necessary spectacles at the prices now ruling at the Moorfields Ophthalmic Hospital. The London County Council undertakes to arrange for the services of a nurse on six half-days a week. The remuneration of the staff would be £50 each *per annum* for a half-day's work each week during the school year. The London County Council would make payment to the House Committee every quarter at the rate of 2s. for each patient, provided that should a child suffer not only from eye defects but also either from ear, nose, or throat defects, it would count as two patients.

The procedure by which the patient would reach the clinic is fully set out in the Wandsworth scheme. A child found defective on inspection would be given a card notifying in general terms the nature of its defect, and requiring the parent or guardian to consult a doctor immediately, and to return a counterfoil to the head master or mistress signed by a registered medical practitioner, certifying that he was undertaking the necessary treatment. If the doctor to whom the child is taken considers that the parent or guardian cannot afford the necessary expense, a certificate on a prescribed form will be given either by the doctor or the local care committee, referring the child to the clinic for treatment. The Wandsworth meeting expressed the opinion that a medical certificate should be the only pass to the clinic. The clinic undertakes to supply the school inspector each week with a list of new patients in attendance and of those who have failed to attend.

The schemes are only for one year, and their details may have to be amended as a result of experience, but the main principles will no doubt prove acceptable to all concerned. At present the schemes are limited by the restrictions imposed by the County Council as to the kinds of defect and disease which are to be treated. Last week we referred briefly to the strange decision of the London County Council to exclude diseases of the teeth from the list of diseases for the treatment of which it would provide. Our reference was brief, but its defects are amply supplied by the interesting letter from Mr. Norman G. Bennett which we publish elsewhere this week. He puts the matter in a nutshell when he says, with the authority that belongs to a dental surgeon who works both at a special and a general hospital, that "diseased teeth in children are responsible for much pain and misery, loss or waste of school time, disordered nutrition, and secondary disease of other organs," and few would be found to dispute his conclusion that the treatment of dental disease, by reason of its prevalence and far-reaching effects, is a problem of truly national importance. The County Council in limiting the cases for the treatment of which it would arrange to disorders of certain organs, and excluding diseases of the teeth, was no doubt actuated by the fear that the ratepayer might regard the prospective financial burden as too onerous.

On public grounds, for the sake of the children of the nation, such a policy is mistaken, and the financial arrangements suggested by Wandsworth and Norwood involve the Council in pecuniary responsibilities on a scale so modest that the most inveterate champion of economy at any price cannot reasonably object to them. Mr. Bennett, who as Honorary Secretary of the British Dental Association has excellent opportunities of gathering the opinion of the dental profession tells us that the rooms of such institutions as those to be established in Wandsworth, Norwood, and Hampstead could easily be adapted for dental treatment, and that efficiency in such treatment is compatible with simplicity and cheapness; he points out, further, that the magnitude of the work which now appals some education authorities would be greatly reduced in the future if attention were given to dental disorders at an early age. In any case, as he says, the gravity of an admitted evil is a strange reason for leaving it alone, and he is able to promise that the question has so interested the dental profession for many years that it may confidently be expected that a sufficient number of dental surgeons will come forward to help in what they regard as a national work, provided remuneration is given at a reasonable rate.

Mr. Bennett's point that proper attention at an early age will diminish the amount which will be required to be expended in future on the treatment of older children is true also of other diseases, especially those of the throat, ear, and skin. In all probability the amount of work to be done in all departments of the school clinic will, when once the accumulation has been overtaken, tend to diminish rather than increase, and it seems to us that if the schemes at Wandsworth and Norwood err at all it is in respect of the small number of medical men proposed now to be appointed to the staff of the clinic. It is, however, a good point in both schemes that they are easily capable of extension when and where this may prove to be necessary. Mr. Sydney Holland, in his breezy way, said the other day that he would like to have a conference with some "reasonable men." We commend these schemes to his sympathetic attention; we venture to think that he will agree with us that there are reasonable men in the South, and we may make no doubt that equally reasonable men will be found in the East, out of which we know all wisdom comes. There would seem to be no reason why the other Metropolitan Divisions of the Association should not follow the example of Norwood and Wandsworth and offer to the London County Council schemes on the above lines which could be accepted to take the place of the present unsatisfactory arrangements made with voluntary hospitals. The agreements with the hospitals expire in December next, and since, as was pointed out last week, the system they embody is inadequate in scope and inefficient in execution, it is to be hoped in the interests of the children that they will not be renewed. The fundamental principles approved by the British Medical Association are sound, and as the detailed schemes evolved in Wandsworth and Norwood prove, are capable of being worked out in a thoroughly practical way.

EPILEPSY.

PERHAPS no better illustration than that of epilepsy could be selected of the truth of Herbert Spencer's statement that the circle of surrounding nescience grows with every advance of science. A disorder which for ages has riveted attention, it has in these modern days been the subject of the closest anatomical, clinical, and chemical research, with the principal result that the field of investigation has become infinitely extended by the continual appearance of new and unsolved problems. Dr. W. A. Turner, the third and last of whose Morison Lectures on epilepsy we publish to-day, says in his book on epilepsy that notwithstanding the fact that modern investigations into cerebral architecture have revealed in large measure the mechanism of convulsions, the actual nature and essence of epilepsy is as little determined to-day as when Lucretius penned his graphic description of the *grand mal* seizure nearly two thousand years ago. For want of this knowledge, and in the absence of any absolute criterion, it is difficult to say what is an epileptic phenomenon and what is not, and, as is well known, the greatest differences exist among eminent authorities upon this first and essential point of definition. Whilst some regard major convulsive seizures as a necessary feature, others base their diagnosis on purely psychical factors, or, still further, regard periodic fluctuations of emotional tone as the distinguishing characteristic. Dr. Turner, in his definition of genuine or idiopathic epilepsy, of which these Morison Lectures contain an admirably comprehensive account, considers sudden, brief loss or impairment of consciousness to be the sole necessary feature. His definition, therefore, includes within one category the classical fit, *petit mal*, automatism, psychical epilepsy, and the epileptic equivalents. This definition, though wide, finds its justification in the fact pointed out by Herpin that there may be found in the same person all gradations of paroxysms, from the simple aura to the complete fit, and, further, from the fact that psychical attacks without motor expression have their exact counterparts in the pre-paroxysmal and post-paroxysmal psychoses of ordinary epileptics. Even though psychical attacks differ objectively *toto coelo*

from convulsive seizures, and though *petit mal* is said to be unaffected by remedies which operate powerfully in *grand mal*, there appear to be grounds for referring all the diverse manifestations of the groups of symptoms collected together under the term of "idiopathic epilepsy" to a common though as yet unascertained causation.

In discussing causation it is necessary to distinguish between facts belonging to the order of empiric observation and those which furnish a theoretical explanation. To the former order belong such predisposing factors as a neuropathic heredity, the presence in epileptics of the so-called stigmata of degeneration, the most common age of onset of the disease, etc., and, among exciting causes, such factors as irregularity in the catamenia, pregnancy, sleep, psychical influences, and infective diseases. Dr. Turner attaches great importance as predisposing factors to neuropathic heredity, which he has found present in some 50 per cent. of all his cases, and to the stigmata of degeneration, which he regards as proof conclusive of a hereditary degenerative predisposition. Any empiric fact, however, may become part of a theoretical explanation, such as, for example, the observation that the greatest number of fits occur during the first hour or two of falling asleep. Whether this fact, Dr. Turner says, is to be explained on the theory of brain anaemia (Pick), of lessened inhibitory control (Clark), of the alkaline tide (Haig), or of increase in the rate of blood coagulation (J. Turner), are points on which evidence is insufficient. In this relation we would draw attention to Dr. Turner's deeply interesting discussion of the immediate causes of epileptic seizures. Here he quotes Dr. A. E. Russell, who, in his Goulstonian Lectures in 1909, presented a great deal of evidence in support of the view that the sudden loss of consciousness of epilepsy is not due to an intense "discharge" from the cortical grey matter, but to a sudden cessation of the whole cerebral circulation, that is, to cerebral anaemia. The convulsions of Stokes-Adams disease, the fits provoked by ligature of the internal carotid arteries, the fit which Leonard Hill produced upon himself by digital compression of one carotid artery, and the observed fact that an epileptic fit may be ushered in by a temporary cessation of the heart's action and the pulse beat, may all be adduced in favour of this theory. As yet, however, Dr. Turner says there is no direct demonstration that either vaso-constriction or cerebral anaemia is the exciting cause of the recurring seizures of epilepsy, and even admitting these as causes the explanation of the periodic tendency to arterial spasm would still be to seek.

Before leaving this question of causation, the toxic or autotoxic origin of epilepsy calls for mention. Dr. Turner only refers to a few of the great numbers of workers in this field, which a few years ago appeared the most promising of all and which to-day has probably the greatest number of convinced adherents. He has to admit that "the discrepancies in the results of observations by different workers upon urinary and blood toxicity in epilepsy have not afforded satisfactory evidence upon which to found such a theory." We need only recall the fact that whilst Féré found the pre-paroxysmal urine thirteen times more toxic than the post-paroxysmal, Voison and Peron found the reverse condition; that the researches of d'Abundo and Ceni into the blood of epileptics gave completely opposed results; and that, as we mentioned some weeks ago, experiments upon the rate of coagulation of the blood of epileptics are also contradictory, reluctantly to confirm Dr. Turner's opinion. The fact appears to be, as Bianchi says, that it is not a question of specific intoxication, but of a great variety of intoxications giving identical results; that is, that the cause is probably an inherent cerebral anomaly of whose actual nature we are as yet ignorant.

Turning to the surer ground of treatment, Dr. Turner says that there is no specific treatment for epilepsy, though the alkaline bromide salts come nearest to this definition. He points out that the universal prescribing of the bromides since their introduction in 1857 by Sir Charles Locock has to a large extent deprived the patients of the other advantages—dietetic, hygienic, and disciplinary—by which they formerly benefited. Therefore, although he does not speak favourably of any drug as a substitute for the bromides, and, indeed, says that all cases, especially those of recent onset, should be given the benefit of the drug for a time, he is careful to insist upon the rigorous application of general hygienic principles and the treatment of minor disorders which might be instrumental in exciting the disease in predisposed persons.

Although Dr. Turner states that in his experience bromide treatment does good in only a little over 50 per cent. of all cases, we gather that, with the overwhelming majority of other authorities, he is of the opinion that there is no substitute for the bromides. Yet he is careful to say that in some cases they augment the frequency or severity of the seizures, apart altogether from the toxic symptoms, or "bromism," which follow their prolonged or injudicious use. The dose usually given is, he considers, too large, and it should be remembered that they have an accumulative property. A combination of potassium bromide, picrotoxin, and antimony arseniate, which Dr. Turner has found of great use in arresting fits in cases in which the bromides alone had been of no use, is of theoretical interest, because picrotoxin in small doses is said to lessen the tendency to cerebral vaso-constriction, furnishing thus an additional point in favour of the cerebral anaemia theory of epilepsy.

Before leaving this matter of bromide treatment, it is necessary to refer to the "salt-poor" diet introduced by Toulouse and Richet. The effect of this treatment, which has given very variable results, is said to depend on two main facts. The first is Landenheimer's discovery that no therapeutic result follows bromide administration until an equilibrium has been established between intake and output—that is, until a saturation point has been reached. It is known that the bromide salts accumulate chiefly in the blood serum, and Hoppe has shown that no therapeutic action takes place until one-third of the chlorine in the blood serum has been replaced by a chemically equivalent amount of bromine. The less salt that is ingested in the food, therefore, the sooner will the saturation point be reached, and it is maintained that upon a salt-free diet this is attained in three or four days, instead of after as many weeks with an unrestricted diet. The treatment is said to be not unattended with danger. Upon an unrestricted diet, a patient may take considerable doses of bromide for years without toxic symptoms, whereas with a salt-free diet they may appear suddenly after a few weeks, either as the result of changes in diet or in the preparation of bromide employed, or because of some intercurrent affection in which salt excretion is diminished and bromide retention occurs. The margin of permissible error, in fact, is reduced to

a minimum. Dr. Turner says that his own experience of this treatment has been such that when used in combination with a purin-free dietary very substantial benefit may be derived and only relatively small doses of the bromides need be prescribed. Lundborg,[1] however, out of 35 cases treated in this manner, had 25 cases of acute intoxication or "metatrophic bromism," 6 of whom died, and he is strongly of the opinion that, though it has its undoubted advantages, the salt-free diet and bromide treatment ought only to be used when the patient is under continuous observation in a hospital or special institution.

Of treatment by drugs other that the bromides little need be said. One by one Dr. Turner takes them up—borax, belladonna, the salts of zinc, opium, strychnine, monobromate of camphor, chloretone, the much vaunted bromopine, bromaline, and bromocapsine—and drops them one by one. In special circumstances and at certain times they may be of use in combination with a salt of bromine. As to serotherapy, Dr. Turner confirms the general opinion when he says that even in the hands of Ceni, its originator, its practical utility has not been proved, and organotherapy Dr. Turner has found worse than useless. As Bianchi says, the bromide treatment has remained all along the most promising. All the proposed modifications, some of them associated with the names of recognized authorities, have resulted in almost complete disappointment.

In our brief mention of Dr. Turner's admirable lectures, so compact of information and experience that they defy expression in shorter terms than their own, we have only been able to dwell on one or two points of practical interest, and have had to leave untouched many topics of increasing interest on the borderland of epilepsy. The lectures, which are concerned almost entirely with the idiopathic disorder, furnish in themselves sufficient evidence of the immense activities in this field of research. Epilepsy, Professor Binswanger said recently, in its etiological, pathogenetic, and symptomatological relations conceals the greatest riddles, but it is impossible to survey these activities without hoping that Herbert Spencer, when he defined knowledge as enclosed by an ever-expanding circle of nescience, was wrong, that his critics who maintain that knowledge would more properly be compared to a pyramid are right, and that in this matter at least we shall in the end get to the bottom.

"WELTMERISM."

MOST of our readers will doubtless ask, What is Weltmerism? We were under the impression that it was one of the innumerable freaks of the charlatan fancy which flourished only on American soil. But our opinion on it has been asked by a correspondent, who has forwarded an *Illustrated Catalogue of the Weltmer Institute of Suggestive Therapeutics*. We should have thought the *Catalogue* bore its character on its face. We can best describe it by the word "Ducdame," which the melancholy Jacques defined as an invocation to call fools in a circle. A few extracts will suffice to show the nature of Weltmerism. The shrine, which is described as a "Pool of Siloam for the sick and afflicted," is at Nevada, in Missouri, and the *genius loci* is one Sidney A. Weltmer, who, after a brief study of medicine under a general practitioner, took a short cut to fortune and set up as a magnetic healer. His institute was founded in 1897, and there he forthwith set about not only treating disease but teaching others "to heal the withered limb, bring back the light to sightless eyes, soothe the weary soul, and restore the hopeless invalids to useful and happy lives." The "course" seems, as Hamlet says, as easy as lying; 40,000 students have already been taught to heal the sick and afflicted without medicine or surgery. As for his teaching, the *Catalogue* states that "psychology is basic in every part of the School. In every branch of study *Mental Force* is the basis from which we work." This is all the more remarkable since we are further informed that "disease is all physical." Yet, although "the mind is never sick, but sometimes through improper or careless expression through the physical, it changes the physical expression, until it is only by careful and determined effort that the mind can again regain sufficient control to express health through the physical organs, which can only be adjusted permanently through harmonious Mental Action." After this luminous exposition, the disciple can scarcely need any further instruction; like Gil Blas, he has learnt the whole art at once. Nevertheless, teaching is held to be necessary, and it must be paid for, the whole four years' course costing £90. Among the textbooks naturally the Sibylline books of S. A. Weltmer occupy a prominent place, but the student is also recommended to study such purely physical books as "Virchew" on the Cell; "Vaughn's" *Physio Physics*, and others on "veneral" diseases, "bactierology," etc. In the history of philosophy he has a wide range of choice, from Zoroaster to "Shakesphere" and "Thackery." Then there is a "psychic class," for which an extra charge of £10 seems to be made; this is cheap, considering that it includes "all Occult, Mind Culture, Telepathy, Spirit Phenomena," besides hypnotism, magnetic healing, vital magnetism, and mesmerism. To get the benefit of the treatment, one need not make a pilgrimage to Nevada. "Distance is no barrier. Professor Weltmer has patients in nearly every civilized country of the earth who have been cured by Absent Treatment." More than 75 per cent. of these are "abandoned cases"—which we suppose correspond to those who figure in the advertisements as having been given up by ever so many doctors. Weltmerism is, in short, a particularly gross form of quackery, which makes its appeal not only to ignorance and superstition, but to greed, as it professes to cure poverty as well as disease. There is said to be a "Concentration Class of about 4,500 people in all parts of the world who concentrate daily with Professor Weltmer for business success. The results are wonderful." We have no difficulty in believing it; the professor himself at least seems to make his system pay. He charges £1 for a quarter of an hour's thinking about an absent patient. Some years ago it was shown that he was in this way receiving £100 a day. A simple sum in arithmetic will show that this is a fraud. Yet when the United States Post Office refused to transmit his circulars on the ground that "magnetic healing" was a sham, the Supreme Court of the United States decided that "it is not possible to determine as a fact that these claims (Weltmer's) are so far unfounded as to justify a determination that those who maintain them and practise upon that basis obtain their money by false pretences"! Naturally Weltmer claims this judgement as the highest testimonial to the virtues of his treatment, and boasts that "No other system of healing has ever undergone such a crucial test since Time began, and the great victory achieved for Weltmerism places it in the front ranks of the greatest discoveries of this or

[1] Herman Lundborg, Ueber die sogenannte metatrophische Behandlungsmethode nach Toulouse-Richet gegen Epilepsie, *Arch. f. Psychiatr.*, Heft 2 and 3. 1908.

any other age." And, indeed, what are even Mrs. Eddy's clouds of "testimonies" beside this amazing deliverance of the highest legal tribunal in the United States! The law is often what Mr. Bumble, in his haste, called it. But is not his irreverent description still more often applicable to its interpreters?

PATHOLOGY AND NOSOLOGY.

As precision and uniformity of terminology are aids to clearness of thinking, Professor Aschoff (*Deutsch. med. Woch.*, February 3rd) thinks a useful purpose may be served by discussing the exact meanings which should attach to the words "pathology" and "nosology." Modern writers are not always consistent in their employment of these terms, so that it is desirable to clear the ground by ascertaining how the words *πάθος* and *νόσος* were employed by the ancients. Professor Aschoff has collected from the writings of Galen many interesting passages which throw light on this question. Disease (*νόσος*) is defined as an abnormal condition (*κατασκευὴ παρὰ φύσιν*) through which direct injury is done to a vital activity (*ἐνέργεια*). Disease is the opposite of health (*ὑγιεία*). From both these terms must be distinguished a *πάθος* or *πάθημα*—a wide term, comprising any sort of "affection" (in the sense of the Latin *affectio*) and including sense impressions. A *πάθος* is a passive change of state, being distinguished by its passivity from an *ἐνέργεια*, which is an active change of state. When the force producing the change ceases to act, the modification which remains in the affected object is termed a *διάθεσις*. In general outline, the ancient conception of the conditions determining health and disease was as follows: We are endowed with a vital power, or potential energy, which is termed *δύναμις*. The active motion, or vital activity, emanating from the *δύναμις* is *ἐνέργεια*, whilst the determining force acting upon any given system or *διάθεσις* is termed *πάθος*. The resultant condition is again termed a *διάθεσις*. A persistently modified *διάθεσις* was also termed by the old Greek physicians a *πάθος*. *Πάθος*, again, was conceived by some of them as a production of change *παρὰ φύσιν*, which accordingly led to a *διάθεσις παρὰ φύσιν*. But a *διάθεσις παρὰ φύσιν*, or *πάθος*, did not necessarily amount to a *νόσος*. The last conception involved the additional idea of an impairment of vital activity. The *νόσος*, being based on an abnormal *διάθεσις*, gives rise to abnormal vital processes, and the course of these is marked by changes in the *διάθεσις*. These recognizable changes in the *διάθεσις* are the symptoms (*συμπτώματα*). Thus the *νόσος* involves active changes of a morbid nature, and in that respect is more than a *πάθος*, which involves merely passive change. In other words, it is the activity of the morbid processes which converts the *πάθος* into a *νόσος*. Hence Professor Aschoff finds that the ancient writers lend no support to the modern view, advocated by Professor Ribbert, that *πάθος* is the narrower and *νόσος* the wider term, the former being the subjective aspect of the latter. The ancients, he maintains, used *πάθος* as the wider term, designative of suffering (*affectio*) in general, and regarded *νόσος* as a specialized kind of *πάθος*; and in support of his opinion that modern terminology should adhere to the ancient usage, Professor Aschoff quotes the following passage from Virchow: "An outwardly produced injurious influence which is immediately rectified, or which only acts as an 'adequate vital stimulus,' is regarded as physiological. A similar injurious influence which is of long duration is pathological. But before elaborating this distinction I must particularly call attention to the fact that every pathological condition does not necessarily determine a disease and does not always stand in relation to a disease. Much larger is the category of ills (*mala*), defects (*vitia*), or sufferings (*passiones*, *πάθη*). Disease (*morbus*, *nosos*) first begins when, through a pathological condition, there are introduced further impairments of vital processes, involving the element of danger."

CURIOSITIES OF ANTIVIVISECTIONIST LITERATURE.

JOHNSON said to Boswell: "Sir, you have only two subjects of conversation, yourself and me; I am sick of both." Something of the same kind may be said of the antivivisectionist journals. In each of them a large space is given to the glorification of their own particular sect of antivivisectionism and the anathematization of the others. Thus, the *Zoophilist* is mainly devoted to the sayings and doings of Mr. Stephen Coleridge; the *Abolitionist* has the names of Dr. Hadwen and Miss Beatrice Kidd writ large over its pages; now comes the *Antivivisection Review*, in which Miss Lind-af-Hageby has a stage suitable for the display of her peculiar genius. In the February number, which has been kindly sent to us, we find a report of what is called "an enthusiastic and fiery Protest Meeting" against the action of the Battersea Borough Council in removing the Brown Dog. Some idea of the fire and enthusiasm of the proceedings may be formed from the fact that the chairman, Sir George Kekewich, read the following letter, which we reproduce as it stands: "My dear Sir George,—I am sorry I am unable to attend the meeting to-morrow night and support you on the platform, as I should like to do. I can quite understand why the memorial of the Brown Dog is offensive to vivisectors, and I earnestly hope it will remain so. I have already conveyed to Professor Starling that my wife has a favourite Dachshund, a great pet, and that if he or any of his gang touch that dog I will shoot him. I have had no reply from the Professor.—Yours truly (Sgd.) Admiral Sir WM. KENNEDY." The form of signature is remarkable, but that may be attributed to the excitement into which the gallant admiral seems to have lashed himself. If Professor Starling ever received the precious epistle he probably concluded that the writer was mad. The admiral does not in the least mean that he would shoot the professor, because he knows that if he did he would be hanged—a form of "vivisection" that would doubtless be particularly disagreeable to him. If we remember aright, the admiral has the same want of feeling for snakes and such like creeping but sentient things that Sir George Kekewich has for the sufferings of the salmon whom he tortures for his sport. It is, therefore, not humanity that stirs his breast when he challenges Professor Starling and his gang to touch his wife's dachshund. His letter is simply a piece of what sailors, we believe, call "swank." It was unkind, however, on the part of his friends to allow it to see the light.

THE POMEROY PUPIL.

WE are not exactly aware, as Mr. Micawber said in reference to gowans, who Mrs. Pomeroy, Ltd., may be, or in what way she is limited. If we may judge from a letter which has been forwarded to us, she certainly does not seem to limit herself to the truth in her statements. She asks: "Have you not found during the dull weather that your eyes suffer a stinging sensation which is unpleasant, and the pupils become red?" Assuming that the "dear madam" addressed has noted this remarkable phenomenon, Mrs. Pomeroy, Ltd., goes on to inform her that "the use of a soothing eye lotion will protect and strengthen your eyes." In the "Pomeroy Eye Lotion" will be found all the soothing and strengthening properties required. "It will render the pupils white

and enable them to withstand any undue strain, whether it be caused by work, reading, or the inclemency of the weather. It costs," etc. But why count the cost when you can get something that will make your pupils white? Mrs. Pomeroy, Ltd., has evidently had frequent occasion to notice something green in the eyes of the people who patronize her establishment, of which, by the way, there appear to be branches in Birmingham, Liverpool, Dublin, Glasgow, and Sheffield. We suppose she hopes to make the Pomeroy pupil fashionable. It would assuredly be conspicuous. But we wonder what the *clientèle* of Mrs. Pomeroy, Ltd., would have to say to her if her mirific lotion really made their pupils white? We fear that some of them would, like the Slasher in Eugene Sue's *Mysteries of Paris*, "see red."

THE GOVERNMENT'S MIDWIVES BILL.

THE Midwives Bill 1910, introduced into the House of Lords by the Lord President of the Council, is founded upon the report and proposes to carry out some of the recommendations of the Departmental Committee appointed by the Lord President in December, 1908, to consider the working of the Midwives Act 1902. A summary of the Committee's report which was issued last August, together with the full text of the recommendations, will be found in the JOURNAL of August 28th, 1909, p. 556. As will be seen from the text of the bill published in the SUPPLEMENT, p. 160, it proposes to increase the number of members of the Central Midwives Board from nine to thirteen by giving representatives to the Local Government Board, the British Medical Association, the Association of Municipal Corporations, and the Society of Medical Officers of Health. The constitution is also slightly altered by requiring that the representatives of the Incorporated Midwives Institute, and of the Royal British Nurses' Association shall be certified midwives. Further, the Central Midwives Board would itself be empowered in the future to make representations to the Privy Council for increasing or diminishing the number of persons representing any body, or conferring on any new body a power of appointment, and of altering the term of office or qualifications of any member. The Privy Council would have power, after the application had been laid upon the table of both Houses of Parliament for forty days, to carry out the recommendations made. Clause 8 would give power to the Central Midwives Board to suspend a midwife from practice, in lieu of striking her name off the roll, and to local supervising authorities power to suspend a midwife pending adjudication on her case. Clause 10 would require a woman whose name was removed from the Roll to surrender her certificate to the Central Midwives Board, and Clause 11 is apparently intended to carry out the recommendation of the Departmental Committee that provision should be made to prevent any evasion of the disciplinary restrictions of the Act by certified women who abstained from giving notice of intention to practise, and claimed merely to be acting as monthly nurses. Clause 17 provides for payment of any duly qualified medical practitioner summoned upon the advice of a certified midwife to render assistance in a case of emergency; he would be entitled to recover from the board of guardians such fee as might be fixed by a regulation of the Local Government Board, and the guardians might, if they thought fit, treat such fee as relief by way of loan and recoverable. With regard to this provision Mrs. Sidney Webb has circulated a letter, in which she declares it to be a great injustice to the woman and her husband, inasmuch as the fee paid by the board of guardians would be regarded by them as parochial relief. Of this she writes: "The woman and her husband are not paupers—they are not even destitute persons. Through the exercise of thrift they have made for themselves the normal provision for childbirth of their class—that is, a midwife. The Government proposes to make them compulsorily into paupers (even if they subsequently repay the full amount it makes no difference in this respect); their homes will be visited by the relieving officer with his hated inquiries, often to the detriment (as any nurse or midwife will testify) of the woman's health; they will be liable to be proceeded against by the board of guardians if (as is intended by Clause 17, subclause 2) the 'relief' is given 'on loan,' and compelled to repay a charge which they have never incurred, but which the State, in the public interest, has chosen to require." Mrs. Webb's statements as to the legal effect of the payment of the fee being made through the guardians are, we believe, accurate, though rather strongly expressed; the husband, however, would not be involved in any political disability. Mrs. Webb's objection is further evidence, if such were needed, of the validity of the recommendation made to the Departmental Committee on behalf of the British Medical Association by the Medical Secretary, Dr. J. Smith Whitaker, who said, "that the matter should be dealt with through the local health authority and not through the Poor Law, as it is undertaken more in the interests of the public than in the interests of the individual."

CRIMINAL STATISTICS.

THE statistics of crime in 1908 were published in a Blue Book last week. It appears that the number of persons tried for indictable offences during the year was 68,116—a higher number than in any previous year for which statistics are given—and the police estimated that on the first Tuesday in April, 1908, there were 4,255 habitual criminals at large. These facts and figures would be more melancholy reading than they are were it not that they are to some extent explained in the rest of the report. In the first place the exceptional increase in crime in 1908 coincided with marked depression of trade and an unusual amount of unemployment. The comparison between crime and unemployment is very forcibly suggested by the localities in which labour disputes and increases of crime principally occurred. Nearly five-sixths of the increase took place in the principal mining and manufacturing counties; less than one-sixth in London and the adjacent counties. That the temporary increase in 1908 was due to some abnormal cause is also shown by the fact that during the last fifty years the proportion of crime to population has been steadily decreasing. During the years 1857–1861 the annual average of indictable offences tried was 265 per 100,000 of population. In 1908 the number was only 192. Finally, with regard to the habitual criminal, an Act of Parliament is now in force which will enable persons of this class to be kept imprisoned for longer periods. Taking the report and the statistics as a whole, it would appear that the number of criminals is growing smaller, in spite of the fact that sentences are much shorter than they used to be. The reason assigned for this beneficent change is that as education advances crime appears to recede. To a man who has acquired but a small degree of culture or refinement the punishment begins long before the door of the gaol is reached, for, as Talleyrand said, "*C'est le crime qui fait la honte, et non pas l'echafaud.*" But education is at work in a still more subtle way. It leads the people along paths where incitement to commit crime is not to be found. No one who has taken part in the administration of the criminal law can have failed to observe that the consumption of liquor is responsible for a large percentage of the

cases which come before the courts. But the desire to drink to excess is abating. It may be remembered that the following statement was published in a Blue Book just before the famous Budget of 1909: "The diminishing consumption of alcoholic liquors, though to some extent attributable to the recent depression in trade, is principally the result of a continuous change in the habits of the people, which has been in progress for some time and seems likely to be permanent."

THE BRUSSELS EXHIBITION.

The Home Office had upon view this week its proposed contribution to the forthcoming International Exhibition at Brussels. It is chiefly intended to illustrate subjects to which its industrial department has recently given special attention. Though for this reason not exhaustive, it serves, nevertheless, to give a fair idea of the amount of care and ingenuity devoted in this country to protecting the safety and well-being of the working classes during their hours of labour. Moreover, those responsible for getting the collection together have contrived to secure for it a certain number of elements of popular attractiveness. Besides models of apparatus and very many photographs, there are a certain number of actual appliances. These include various hygrometers for use in textile factories where a certain degree of relative humidity has to be secured, constructed in such fashion that the instruments may be read at a distance and by those not scientifically conversant with hygroscopic methods. Among the models are some illustrating stations now in use at certain collieries in Yorkshire, Lancashire, and South Wales, for training men in life-saving operations after mining catastrophes. Methods of dealing with air impurities and the estimation of lead in glazes are also demonstrated. Specimens of the posters issued or authorized by the Home Office for display in factories are also shown; two of them deal with the application of Schäfer's artificial respiration to persons "gassed" by carbon monoxide or in a state of suspended animation owing to electric shock. The diagrams illustrating this did not seem entirely satisfactory, the differences between the expiratory and inspiratory movements not being sufficiently emphasized. Another interesting exhibit is that relating to the detection of ankylostomiasis. Each miner as he comes off work has his thumb pricked, and should the resulting film reveal an excess of eosinophile leucocytes to the extent of 8 per cent. the case is regarded as suspicious, and a search for ova in the faeces follows. It is a quick way of dealing with a large number of miners, but only applicable, of course, in countries where causes of eosinophilia in apparently healthy persons, other than ankylostomiasis, are rare.

CANCER RESEARCH IN AMERICA.

The annual report of the Cancer Laboratory of the State Department of Health at Buffalo, by Dr. Harvey R. Gaylord, was submitted to the New York State Legislature on February 14th. The report, according to the *Boston Medical and Surgical Journal*, shows that in animals immunity to the Jensen tumour may be secured by the use of a specific serum. It appears that where the resistance of the animal is not awakened by one inoculation of the tumour this resistance can be heightened by repeated doses, and in a considerable proportion of cases immunity can be raised to a point which will bring about a cure. The report goes on to say: "As we strongly urged upon the Legislature in our eighth and ninth annual reports, the time has come when we should begin experimentation with human beings . . . The only basis on which work of this kind can be done is where the patient submits himself for experimental purposes, and it is necessary under such conditions that the State should pay the maintenance of the patient. It is impossible to undertake systematic work of this kind unless a sufficient number of patients can be placed under observation to make the figures sufficiently conclusive to corroborate any conclusions which may be reached. Funds sufficient to enable us to maintain ten patients is the least amount which can be of value if this work is to be undertaken."

A CENTENARIAN DOCTOR.

Mention was made in a recent issue of the fact that Dr. Boullé of Saint-Valérien was about to complete his 100th year. This he has now done, and a banquet was held in his honour. Moreover, the Minister of Public Instruction conferred upon him the decoration of *officier d'Académie*. Dr. Boullé is described as a little wizened man, but still alert and upright in his carriage. He attended the banquet accompanied by his youngest son, now aged 65, who is himself a member of the medical profession. His father and his grandfather were doctors, and both practised at Saint-Valérien; this forms what may be called a medical succession going back to 1750. Dr. Boullé says that in his father's time they lived like the peasants to whom they ministered, eating more potatoes than meat. Boullé *père* cultivated his land when he had no patients to look after. In this way he was able to bring up a family of six children, all of whom, said the old man, with natural pride, were honest folk. Dr. Boullé began his medical studies under Dr. Rétif of Sens, who, said the centenarian modestly, had no sinecure, as his pupil's head was somewhat thick. In 1828 he went to Paris, where he took his degree. He witnessed the revolution of 1830, but took no part in the disturbances. In 1848 he was elected Republican Mayor of Saint-Valérien, and in 1851 he protested against the *coup d'état*. He was on the point of being arrested, but even his political opponents pleaded on his behalf. Two years ago he took part in saving his papers and furniture when his house was on fire. On that occasion, notwithstanding his 98 years, he climbed a ladder to the top of the building. He has not practised any system of diet or drink; throughout his life he has satisfied his hunger and thirst in accordance with the promptings of his appetite. He attributes his good health and length of days to the pure Burgundian air and to the active life which he has always led.

THE NEW LONDON EXAMINATION HALL.

The scheme for establishing the Conjoint Board of the Royal College of Physicians of London and the Royal College of Surgeons of England in a new home has progressed so far that plans for the future building have been finally selected by the two bodies concerned. As has already been stated, the new site is on the west side of Queen Square, Bloomsbury, nearly facing the opening of Great Ormond Street, and has already been cleared. The building which is to occupy it has been designed by Mr. A. N. Prentice, but no contract for the actual work of realizing his ideas has yet been signed. In their paper form they are certainly attractive. The frontage of the building is in general keeping with the architectural traditions of the Square, of which unfortunately few traces still remain, and reminiscent of the William and Mary portion of the palace at Hampton Court. Presumably, therefore, the plans will be worked out in dark red brick with stone facings A strong feature is the central massing of sixteen rectangular windows on the first and second floors

between the two lines of curved architraves above and below and the Corinthian pillars on each side. The latter run up nearly to the top of the building, each bearing by way of capital an allegorical figure in semi-relief. A rough calculation indicates the total elevation to be close on 100 feet, this space being divided between seven stories: a basement partly above street level, a ground floor, four upper stories, and a high-roof attic. The basement is given up to cloakrooms and like accommodation; the ground floor to committee rooms, and the offices of the secretary to the board and his staff. Then come the principal examination rooms, with private rooms for the examiners adjoining. There are two examination rooms on each of the first two upper floors, and together they afford seating space for a total of 540 candidates. The two larger rooms are of fine proportions, their length being over 96 ft., and their breadth 30 ft., while the ratio of window area to floor space is ample. The next floor has special accommodation for examinations in anatomy, physiology, chemistry, and the like, and the remaining two are devoted to the Cancer Research Fund. At each end of the building a staircase runs from top to bottom, and there are two passenger lifts. In planning the internal arrangements the shortcomings of the old Examination Hall on Victoria Embankment—one of the factors in the decision to abandon it—would seem to have been borne in mind. That building was erected in the early days of the Conjoint Board when the requirements were not fully appreciated. In the new building, the undesirability of having to open up the whole premises on a day when very few candidates have to be examined has been kept in view, and the comfort of examiners and examinees, and economy in working, better safeguarded. The arrangements for the work of the Cancer Research Fund also seem excellent. It has at its disposal seventeen separate research rooms, of which only four seem unlikely to be very well lighted, and plenty of accommodation in the attic rooms for animals. At present the latter is marked on the plans "mice," but it may perhaps be hoped that the time will come before long when this will be a misnomer. Eventually these two floors will become ordinary research laboratories, for the capital of the Cancer Research Fund, so soon as its primary object has been fulfilled, reverts to the two colleges.

PROPOSED COMMISSION ON VIVISECTION IN AMERICA.

WE learn from the New York *Medical Record* that a bill has been introduced in the New York Assembly by Mr. Goodspeed, "To establish a commission to inquire into the extent and nature of the practice in this State of experimentation on living animals together with a condition of the laws of the State relative to the proper protection of scientific experiments without danger of unnecessary cruelty." By the terms of the bill the Governor is authorized "to appoint a commission which shall consist of seven members, two of whom shall be physicians or scientific men residing in this State, two of whom shall be active members of some organization of this State having for its purpose the prevention of unnecessary cruelty in vivisection, two of whom shall be lawyers practising within this State, and the remaining member of the commission shall be appointed at large. The commission shall choose a member thereof as chairman. Such commission shall serve without compensation, and shall make inquiry, examination, and investigation into the condition of the law for the protection of scientific investigation of this character in this State, as well as the condition and effectiveness thereof for the prevention of abuse in vivisection and of unnecessary cruelty to animals therein. For these purposes the said commission is hereby authorized to send for persons or papers, to administer oaths, and to examine witnesses and papers respecting all matters pertaining to this subject. Such commission may employ necessary clerical or other assistants, and shall make a full and final report to the governor within one year after its appointment, including such recommendations for legislation as in its judgement may seem proper." The same bill was introduced in the Senate by Mr. Bayne. The demand for the appointment of a Commission is a new departure on the part of the anti-vivisectionists. During the past four sessions of the Legislature of New York bills have been introduced for the purpose of placing severe restrictions upon the practice of animal experimentation, but all these bills have been defeated by the action of the medical profession.

NEW BUILDINGS AT McGILL UNIVERSITY, MONTREAL.

IT will be remembered that the buildings occupied by the Medical Faculty of McGill University were destroyed by fire in 1907. The structure which has been erected to replace them is rapidly nearing completion, and it will be inaugurated by the Governor-General on June 6th and 7th of this year. The new buildings have been erected at a cost of 750,000 dols., on a site near the old medical buildings; it was given to the University by Lord Strathcona, the Chancellor of McGill University, who has contributed more than half of the cost of the new buildings. An interesting programme has been arranged for the ceremonies, and it has been determined to mark the occupation of the new buildings by a reunion of as many as possible of the medical graduates of McGill. Communications have been received from representatives of forty-five classes to say that it is their intention to attend the inauguration of the new buildings as a class, and it is expected that there will be a unique gathering of McGill graduates from all parts of the world in Montreal on this occasion.

A SPECIAL meeting of the Medical Society of London will be held on Monday, April 18th, at 8.30 p.m., at which a paper on Inheritance in Haemophilia will be read by Dr. W. Bulloch and Dr. Paul Fildes. Among those who are expected to take part in the discussion are Professor W. Osler, Sir Almroth Wright, Mr. E. Nettleship, Dr. Parkes Weber, Dr. H. D. Rolleston, Professor Karl Pearson, Professor W. Bateson, Dr. Gossage, and others.

Medical Notes in Parliament.

Vivisection.—On Monday Mr. Douglas Hall asked the Secretary of State for the Home Department whether he would direct that in the forthcoming Annual Return under the Cruelty to Animals Act, 39 and 40 Vic., c. 77, the reasons should be set out why, in experiments performed on dogs without the use of anaesthetics, it was necessary to employ those animals to prevent the object of the experiment being frustrated; and whether any steps were taken, and, if so, what steps, to test the soundness of the reasons given in these cases for making the experiments on dogs. Mr. Churchill replied that, in dealing with certificates for experiments on dogs (whether with or without the use of anaesthetics) the reasons given for making the experiments on dogs were always carefully scrutinized by his expert advisers; and, if there were any doubt, special inquiry was made, before the certificate was allowed, as to the possibility of performing the experiments on other animals. He did not think anything would be gained by giving these reasons in the annual report. Mr. Churchill, in reply

to a further question, said that 483 licences were in force during 1909. Of these licences, 94 were new licences granted in 1909; the remainder were renewals. No applications for licences were refused in 1909. As no applications could come before the Secretary of State unless they were first recommended by the highest scientific authorities, a refusal was naturally of rare occurrence. As regards certificates, the Secretary of State did not *grant* certificates; he has only a power of disallowance. He could not at present state the number of certificates in force during the year, but information would be given in the Annual Return, which would probably be published in June. The number of certificates totally disallowed was eight, and in many other cases the Secretary of State disallowed certain procedures that were proposed, or in other ways limited the scope of the certificate.

The Indian Medical Service.—Mr. Kelly put a series of questions on Monday last to the Under-Secretary for India asking if the resolution passed by the medical profession in Bombay had been considered, and what steps were to be taken to allay the discontent amongst Indian medical practitioners who are excluded from the higher grades of medical service. He also asked why military assistant surgeons had been preferred to Indian civil doctors for appointments at Madras, and what higher grade medical appointments reserved for military doctors had been opened to and filled by Indian practitioners since the publication of the scheme of reform adumbrated in papers laid before Parliament. Mr. Montagu answered the three questions together as follows: The resolution referred to was under the consideration of the Government of India in connexion with the general question of the Indian Medical Service. As to the other points, he must refer to the numerous replies already given. In answer to Mr. Rees, who inquired as to undesirability of making any changes at the Madras Hospital, Mr. Montagu said that the Secretary of State was not aware of any intention on the part of the Government of Madras to introduce changes in the administration of the general hospital at Madras; and he was not prepared, therefore, to address them on the subject.

Hospital Stoppages (Royal Navy).—Mr. McKenna, in answer to a question put by Lord Charles Beresford, stated last week that in the case of illness due to wounds or injuries sustained while on duty the pay of officers and men was governed by the same regulations, under which full pay was allowed generally until cured or pensioned. In cases of ordinary sickness, petty officers and men sent to hospital or sick quarters at home were allowed full pay for thirty days and pay, less hospital stoppages (usually 8d. or 10d. a day), for a further sixty-one days, unless invalided from the service. When falling sick abroad, full pay was allowed without deduction until arrival in England, and was then continued under the same limits and conditions as in the case of men falling sick at home. It was true that in cases of ordinary illness not due to the service hospital stoppages were not recovered from officers on full pay, but the regulations governing their pay generally were quite different from those in force for men, and it was considered that no useful comparison could be drawn between them. The Board had recently given the subject of hospital stoppages their careful consideration, and they regretted they did not see their way to introducing any further modification in the existing system.

Sick Berth Staff (Royal Navy).—Lord Charles Beresford asked the First Lord of the Admiralty whether he could see his way to make an improvement in the pay and status of the sick berth staff of the Royal Navy. Mr. McKenna replied that the position of the sick berth staff in the matter of pay and advancement was one of the subjects dealt with by the Committee on the Naval Medical Service, whose recommendations were now under the consideration of the Admiralty.

Asylum Officers and the Superannuation Act.—Sir William Collins asked the Home Secretary whether he had issued any directions as to the classification of officers for the purposes of pension under the Act, and also whether the Home Office had received any information as to action taken by asylum committees and local authorities to give effect to the Act, or by the Lunacy Commissioners, and whether the Home Secretary would hear and determine appeals in regard to classification of officers under the Act. Mr. Churchill replied that no directions on the subject had been issued with the sanction of the Home Office, and that no information had been received by the Home Office; but various questions under the Act were discussed at a conference between the Commissioners in Lunacy and representatives of local authorities, and others, on March 14th. It seemed to him that the Secretary of State could not, under Section 15 of the Act, overrule a decision of a visiting committee in a matter left to their discretion under Section 1 (2).

Metropolitan Asylums.—The President of the Local Government Board has informed Mr. Dawes that the managers of the Metropolitan Asylums Board, on November 23rd last, submitted to his department proposals for certain extensions to the Children's Infirmary at Carshalton. These proposals involved the expenditure of a very large sum, estimated to exceed £50,000 or £60,000. In view of the large margin of spare accommodation in other institutions belonging to the Asylums Board, he was of opinion that the whole question of the accommodation of the various classes of patients in the charge of the Asylums Board needed careful consideration, and he was in correspondence with the managers on the subject.

Lead Poisoning and Coach Making.—Last week Mr. Wedgwood asked the Secretary of State for the Home Department whether, with reference to reported cases of lead poisoning, he could give any reason for the reduction last year of from 117 cases to 58 cases in the china and earthenware industry, or for the increase in the coach making industry from 70 to 95 cases; and whether he had any official information showing that the closer supervision over the cleanliness of the workplaces and of the health of the workers had caused the improvement in the case of the pottery industry. The Under Secretary replied that it was difficult to say to what cause or causes the striking diminution in the number of lead cases in the Potteries was to be attributed, but the depression of trade in the earlier part of the year, the additional inspection provided, and the increased attention to the adoption of precautionary measures, had all contributed to the result. The Secretary of State could not assign any reason for the increase in the coach-making industry. This was one of the industries which had been selected for investigation when the pottery inquiry had been completed.

Medical Officials in the Transvaal.—Last week Mr. O'Grady asked the Colonial Secretary a question relating to the outbreak of infectious disease at Germiston and the incidents leading up to the dismissal of Dr. M. A. Curry, the Medical Officer of Health, and the treatment of medical officials generally, and whether it did not act prejudicially to the health of foreigners and white workers in the mining districts of South Africa. Colonel Seely replied that the matters were for the Transvaal Government to consider, and not for the Secretary of State, who did not exercise any authority in respect of them. No complaints regarding foreign subjects had reached the Secretary of State through the diplomatic channel.

The Report on Infant Mortality.—Mr. Burns informed Mr. Pointer last week that some progress had been made with the report on infant mortality, but that he was not yet in a position to fix a date for its publication.

Grants-in-Aid to Hospitals.—In reply to Mr. Godfrey Collins, Mr. Hobhouse has stated the grant-in-aid of Irish hospitals (Sub-head D of the Vote for Hospitals and Charities, Ireland) was £15,850. There was no grant-in-aid to Scottish hospitals.

Ireland.

FROM OUR SPECIAL CORRESPONDENTS.

NURSING IN THE BELFAST POOR LAW UNION INFIRMARY.

BY degrees great improvements have been brought about in the nursing of the workhouse poor; the old system of pauper nurses has disappeared, and in its place a training school for nurses has grown up. This has involved no little increase in expenditure, and Dr. E. Coey Bigger, the Local Government Board's medical inspector, has lately held a full inquiry into the system of nursing and its cost. In his report he points out that twenty-six years ago the nursing was almost entirely in the hands of untrained persons, and most of the work was done by paupers; these untrained assistants had each from 80 to 120 patients under their charge. Nursing, as understood at the present day, did not exist, and the condition of affairs was always a scandal, sometimes a crime. Dr. Bigger gives well-deserved praise to the lady then appointed as superintendent of nurses. "I have never known in connexion with an institution any more self-sacrificing and noble work than that performed by Miss Pirrie. It would be impossible to overestimate the lasting benefits to the sick conferred by the change in the nursing system which commenced in 1884."

Dr. Bigger's words are strong, but they are written by one who had at the time an intimate experience of the evils then existing as resident medical officer, and is now an experienced and trusted inspector of the Local Government Board. Many will remember the fears entertained by Miss Pirrie's friends when she took the post, not merely as to her success and her health in the herculean task of cleansing these augean stables, but at times even for her life. No doubt there was exaggeration, but the task was considered at the time a hopeless one. However, by degrees improvement after improvement was introduced; the medical staff gave their aid, and in 1899 the 94 nurses and probationers were employed at an annual cost of £3,357. At the same time there were 224 pauper attendants in the infirmary and 32 in the fever hospital. A complete training scheme was arranged, and the nurses trained in accordance with it were now recognized by the Local Government Board as "trained nurses." In 1903 the board of guardians decided to dispense with the pauper attendants in the infirmary; the number of nurses was increased to 137, and the annual cost to £5,403. In 1907 the nursing staff had risen to 174, and probationers received fever training at the Municipal Fever Hospital at Purdysburn. In 1909, chiefly owing to the enlarged children's wards called the "Dufferin Hospital," the nurses rose to 193, and the cost to £6,969; the number of paid attendants fell to 8, and pauper attendants in the infirmary to 68. "The increased cost," Dr. Bigger says—and his words will receive universal confirmation—"is far more than counterbalanced by the increased efficiency, a reduced death-rate, more rapid recovery of the patients, more kindly and uniform treatment of the sick, and the stamping out of blackmailing by the pauper attendants—advantages which could not be estimated by a money value." Other matters mentioned by Dr. Bigger as bearing upon the nursing question and its cost are the typhoid epidemic of 1899–1900, the removal of lunatics to the asylum, and the opening of an extern department in 1901 to relieve the congestion of the infirmary. In 1909 the average number of sick rose to 1,780 with an increase in the extern department. The Abbey Sanatorium and the Children's Home are also factors; the average stay of patients has also fallen.

As to reduction in the number of nurses, the average is about one nurse to every ten patients, and this probably could not be lessened. The arrangements for the nurses in the hospital are not up to the standard of other parts of the institution, and should be investigated with the object of making the necessary improvements. Dr. Bigger calls attention to the fact that in July last 107 children, or nearly half the total, were suffering from scabies. "I informed the officers in charge that such a condition of things was simply disgraceful, and reflected discreditably on all concerned." This unhappy condition of affairs has now been much improved.

The report ends with a statement of the satisfaction that must be felt on considering the great improvements and reforms that have been carried out during the last ten years, and the time spent and interest shown by the guardians in the welfare of their sick.

DYING DECLARATIONS.

An army pensioner named Kennedy, who died on March 25th in one of the Dublin unions, made a dying deposition on the morning before his death in which he attributed his injuries to a fall caused by being pushed off a tramcar by the conductor on September 15th, 1909. The declaration was taken down by Dr. McNamara, one of the union medical officers, in the presence of a ward master, and was signed by the patient. Owing to this declaration being made the city coroner was informed of the death, and an inquest was held. At the inquiry a letter from an alleged witness of the accident was read, containing a statement to the effect that the writer had seen the tram conductor pushing Kennedy from the tram, but on examination in court the witness denied the truth of this and every other statement contained in the letter. The accused conductor was present, and stated that the accident arose owing to Kennedy, in spite of being warned, insisting on leaving the tram while it was still in motion. After hearing all the evidence, including the results of a *post-mortem* examination, the jury returned a verdict to the effect that death was caused by pneumonia, and that the alleged accident had nothing to do with it.

The interest of the case to medical men lies in the remarks of the coroner, who insisted that it is only when there is not sufficient time to get a magistrate that a doctor is justified in himself taking down dying declarations. To the jurist this declaration made by a man who was mentally sane and who knew himself to be dying—a declaration which was apparently quite unfounded, though made in good faith—should also be of interest.

DILATORY GUARDIANS.

The Cork Board of Guardians have had administered to them a wholesome admonition on their dilatoriness in bringing their nursery up to date. The Local Government Board has issued what may be called an ultimatum to the Cork Board, in which it is stated that unless immediate steps are taken by the guardians to deal with what is called "the lamentable state of things," the board of guardians would be dissolved, and, presumably, paid administrators will be appointed in their stead. In the report issued by the Local Government Board the position is summarized as follows:

> The guardians are aware that for several years the condition and management of this nursery have been pressed upon their consideration by the representations of their own medical officers, and by the reports of the general and medical inspectors of the Local Government Board. In these circumstances, and as the result of the recent inquiry, the Local Government Board have intimated they cannot be a party to any further dealing with evils in the nursing system which have been exposed at the inquiry; and, unless proper and effectual steps are taken to deal with this lamentable state of things, the Board will be obliged to consider whether there is any course open to them but to dissolve the board of guardians in consequence of their most grave default. The Board have directed Dr. Smyth and Dr. Fitzpatrick, Local Government Board inspectors, to place their services at the disposal of the guardians to confer with them and the medical staff of the hospital with a view to advising the best and most expeditious means of carrying into full effect the necessary reforms which have been referred in this communication.

Some years ago the Cork board was dissolved for a period, and paid representatives of the Local Government Board appointed, with great advantage to the community and economical and efficient administration of the workhouse. The case alluded to in the

report was that of a child named Manley. The evidence at the inquiry justified the conclusion that the child—a few weeks old at the time—did not receive proper care or attention, and was not properly fed while in the workhouse nursery, and that the neglect contributed to its death. The Local Government Board also animadverted upon the high mortality which is a consequence of the guardians' neglect.

The mortality of infants during 1909 as stated by the master was 49 in an average daily number of 85 or 90. There is no available standard of mortality with which these figures could fairly or safely be compared, but they may be compared with returns of infant mortality in workhouses which were submitted to the recent Royal Commission on the Poor Laws. Where it was given in evidence that out of an average of 3,710 infants under 2 years of age always in nurseries and lying-in hospitals of 546 English workhouses examined, there had been an average number of deaths per annum during five years of 1,315. This represents a mortality of 35 per cent. annually of the average infant population in these workhouses—a very alarming proportion of deaths among a constantly changing stream of infants.

Cork workhouse infant mortality must still be much more alarming, because it is 57 per cent.

The chairman of the board is evidently a gentleman not disposed to be depressed by this condition of affairs, because he is reported in the daily press to have said: "They were managing the board very satisfactorily, and but for the expected Poor Law reform they would have done much more in the matter of building. He could not understand why those gentlemen from the Local Government Board who knew nothing about their business should dictate to them."

Infantile Mortality.

The Public Health Committee has recommended the Corporation of Dublin to adopt the Early Notification of Births Act. The Committee points out that the infantile death-rate in Dublin remains high, while it has fallen considerably in English towns, and it believes that the early notification of births has contributed in English towns to this improvement. Three years ago the Corporation was unanimously willing to pay for early notification, but now, though notifications are not to be paid for, it refuses to adopt the Act, although judging from the experience of other towns, the incidental expenses involved are almost negligible.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENT.*]

The Extension of the Glasgow Medical School.

An inquiry by special commissioners under the Private Legislative Procedure Act was held in Glasgow into the three Provisional Orders promoted by the University, the Muirhead Trustees, and the Governors of St. Mungo's College. The provisional orders were necessary in order to carry out the proposed scheme to extend the teaching facilities by transferring the two Clinical Chairs of Medicine and Surgery to the Royal Infirmary, and founding two new Chairs of Pathology and Obstetrics. The inquiry extended over two days, and, after hearing evidence for and against the scheme, the Commissioners found the preamble of the three orders proved, despite some opposition from the Victoria Infirmary.

Recognition of a Doctor's Courage.

The Carnegie Hero Trust Fund trustees have decided to present a medallion to Dr. Donald Macdonald, Laggan, near Kingussie, in view of the courage which he had shown in exceptional circumstances with the object of saving the life of a patient. On January 9th last he succeeded, under conditions that involved risk to his own life, in visiting, at a distance of twenty-two miles, a patient who was seriously ill. On that date the doctor received a telegram at 7 a.m. After finding that it was not possible to complete the journey by the usual road, inasmuch as the streams which had to be crossed were greatly swollen, he made his way through a forest and over a shoulder of Ben Alder, travelling on foot a distance of about twelve miles, and being under the necessity of wading across many mountain streams which were swollen into torrents. He did not reach the house of his patient till 6 in the evening.

England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

MANCHESTER.

Sanatorium Accommodation for Consumption.

At the annual meeting of the Manchester Hospital for Consumption it was announced that the pressure on the male beds at the Crossley Sanatorium, Delamere, had been so great and so many patients had been waiting for admission that it was proposed to put up a new men's dayroom outside the main building, and to use the present dayroom as a large ward. In this way twelve more beds would be provided at a cost not exceeding £1,000. The report of the Medical Board stated that unless the admission of patients was rendered easier by an increase in beds much of the work done would be lost, owing to sheer despair on the part of the patients and to the doctors' loss of faith in the possibility of getting a patient into the sanatorium within a reasonable time. There were now 40 or 50 patients waiting for admission, and if all who wished were allowed to put their names down there would be 150 at least.

In an address on the prevention of consumption, before the Manchester and Salford Sanitary Association, Dr. A. Lathom dealt with some of the predisposing causes, and referred to the difficulties in the way of providing adequate sanatorium treatment. He said that of the total population of England and Wales about 28,000,000 were unable to pay for sanatorium treatment except by some scheme of insurance, and 13,000,000 wholly unable to contribute to the cost of their own treatment. It had been shown by actuarial calculation that sanatorium treatment could be provided for all if everyone over 15 years of age paid 2s. a year, or ½d. a week, to a central insurance fund. He estimated the number of persons suffering from consumption to be not less than 250,000, while over 100,000 suffered from other forms of tuberculosis. He contrasted the way in which Germany deals with the prevention of the disease through its invalidity insurance with the English method of spending millions of pounds on only half treating it. If we spent the same amount of money intelligently we might stamp out the disease in twenty or thirty years. We could have sufficient sanatorium accommodation for 60,000 patients a year, and could maintain the dependants of the wage earner while he was in a sanatorium for £2,500,000 a year. Dr. Niven said the crux of the difficulty was in the provision for the wife and family while the wage earner was being cured. No private charity could suffice for this, and it would be necessary to work out a scheme which the community and the corporation would accept for dealing with the matter.

Scarlet Fever and Isolation.

Dr. A. Fraser in an article in the *Manchester City News* has argued that isolation hospitals for scarlet fever are largely a failure, maintaining it cannot be proved that they have done anything to lessen the number of attacks or their severity, but that it is almost exclusively in the hospitals the most virulent forms of the disease are now seen. He concludes that the isolation of scarlet fever as at present practised is a huge and costly mistake, that the Baguley Hospital alone would be quite sufficient for all the cases of dangerous infectious disease in Manchester, and that the Monsall Hospital might then be set aside for the reception of consumptives.

WEST YORKSHIRE.

THE BRADFORD SCHOOL CLINIC.

We have received the following letter:

Sir,—

There are two sides to every question. For some time past there has been a growing feeling of dissatisfaction with the clinic amongst the general practitioners of Bradford, some of whom naturally do not like to see their patients' children, many of whom they have known all their lives, taken from their care and handed over to State or municipal authorities. This feeling culminated in a meeting held under the auspices of the Bradford Division. At that meeting I quite admit that I made a vigorous attack upon the clinic, but I did my best to differentiate between the clinic as an institution and the medical officers who compose its staff; indeed, many of my remarks would have applied equally well to a clinic in any other town.

Perhaps I can best answer Dr. McCullagh's letter by stating exactly what I did say. I prefaced my remarks with these words: "We are pleased to see Dr. Williams (the medical superintendent) here this evening, and I trust that he, and any members of his staff who may be present, will rest assured that anything which may be said to-night, that any strictures which may be passed, any adverse criticism which may be made upon the clinic or its methods, will be directed against the institution and not against the individual, against the system and not against its exponents." Having said this I stated that I believed almost every general practitioner in Bradford was hostile to the clinic—a fact surely of some significance, for I trust we are not all entirely selfish and devoted to our own interests only, and I gave some cases in which, on the advice of teachers or as the result of pressure by the attendance officers, the clinic had been abused. I then said: "Of course, it would be unfair to hold the medical superintendent responsible for all the acts of the teachers or for those of the various officials connected with his department of the council. I mention these facts to show that even under the direction of such an honest, honourable, and conscientious superintendent as we believe Dr. Williams to be, this school clinic is fast becoming a very serious menace both to the liberties of the parents and to the rights of the general practitioner." In view of such remarks as these I do not think that Dr. McCullagh is quite justified in saying that what I "did was to indulge in a fusillade of invective against the clinic and its staff."

After quoting some remarks of Dr. Crowley's (the founder) in reference to the efficiency of the clinic, I proceeded: "I make no reflection upon the conduct or abilities of the medical staff when I say that treatment carried out under the conditions obtaining at the clinic cannot be satisfactory," and I gave several cases which, in my opinion—it may, of course, be at fault—seem to bear out this contention. All of these cases occurred amongst my own patients, and came directly under my own observation, so that I must differ from Dr. McCullagh when he says or implies that in "90 per cent. of my statements I had not been careful in my search after truth," or that I "had not taken the smallest trouble to ascertain whether there was a semblance of fact behind them."

In my concluding remarks I said, "Finally, I condemn this clinic because in the most intimate relations of life, in the treatment of children in disease, it seeks to substitute the official for the personal element; and here let me again remind you (the meeting) that I am making no reference whatever to the present staff, I am dealing with the clinic as an institution with it seems to me grave possibilities of evil in this direction." I never said, as Dr. McCullagh hints, that any member of the staff was "incompetent or devoid of common sympathy." What I did say was—that the tendency of the clinic and all such institutions was to produce a race of routine officials, with all the faults of officials, who knowing nothing of the home lives and conditions of their patients, and having no personal interest in them or in their families, would *eventually* come to regard them not as individuals but as so much clinical material.

In conclusion, there are a few inaccuracies in Dr. McCullagh's own report of the meeting which I should like to point out: First, in reference to private practice, I said that "*whatever may have been their past*, the medical officers have no *present* experience of general practice, and are completely out of touch with the ordinary run of children's ailments." They are not, of course, to blame for this; it is a mere statement of fact, for in virtue of their appointments they are debarred from general practice. Dr. McCullagh states that I commenced with the announcement that a "school dentist was appointed to the staff." From first to last I made no reference whatever to any such appointment. Finally, I did not describe "the terrible consequences to children's brains following *x*-ray treatment of ringworm." I did say that we knew nothing whatever of the effect of these rays upon children's brains.

I agree with Dr. McCullagh in cordially hoping that matters will improve. The clinic, of course, is a public institution, and as such is liable to criticism, but I fail to see why there need be any personal animosity between the members of its staff and the general practitioners of the town.

I am, yours faithfully,
J. WHERRY WILLSON.

Wayside, Bradford,
April 3rd, 1910.

Special Correspondence.

PARIS.

Medical Relief in France.

DOCTORS all over France have just received lists containing the names of poor persons entitled to medical relief. These lists are drawn up in each commune in January by a special commission, consisting of the mayor and the committee of the *bureau de bienfaisance*. They are submitted to the Municipal Councils in February for their approval or correction, and are then registered under the authority of the prefect; in March they are communicated to those doctors who have consented to take a share in the work of the service, and nowadays most doctors accept this duty.

Medical relief in France is governed by the provisions of the law of 1893. At first its administration gave rise to many difficulties, but for some years past the dispute between the medical profession and the communal and departmental administrations to which it gave rise appears to have quieted down, and questions with regard to medical relief have ceased to give rise to discussions at our congresses. A period of stability has come, for though the system is not perfect, it is in a condition of equilibrium.

While it is obvious that in such a matter the rules and regulations first made will probably require revision, and that practical experience alone can afford sure and certain guidance, yet it cannot be denied that a great deal of irritation might have been avoided if the doctors had been invited in the beginning to take part in the establishment of a system the success of which depended upon their co-operation. The law was discussed, amended, and passed by a parliament which had very nearly reached the term of its existence. The Legislature contented itself with laying down general lines and leaving their application to the General Councils of the departments, which defray two-thirds of the cost, the other third being paid by the communes. Two different systems were at once brought into action.

Under one, the system called *à la visite*, the doctors were paid according to the number of visits they paid to patients, the rate being less than one-half the ordinary tariff, but varying a little in different departments. Generally the fee for a visit made during the day in the locality in which the doctor resides is 1 franc; if the patient resides elsewhere, the fee is calculated at the rate of 25 centimes for each kilometer out and home. Thus, for a visit made at the distance of 8 kilometers, a fee of 4 francs is paid. The fee for visits paid at night (from 9 p.m. to 6 a.m.) is double. The argument adduced to justify this low tariff, which made the doctors share with the State, to the extent of one-half, in the cost of medical relief, was that previously the doctors received no fee at all for these visits, and that therefore they ought to be very pleased to be paid half price. The argument, however, was not quite sound, for the *bureau de bienfaisance* had, as a rule, paid the ordinary tariff; from the patient's point of view, however, this was not satisfactory, for the charity given by the *bureau de bienfaisance* depended upon the goodwill of a very small commission; in fact, the mayor himself always decided on his own authority; the grant could at any moment be revoked, and the local authorities decided without appeal and without control. The State relief, on the other hand, gives the right for a year, and poor persons whose names may be omitted from the list by the municipalities can appeal to the cantonal or prefectoral administration. Further, the system *à la visite* leaves them the most complete liberty in the choice of their doctor; they can change whenever they like. Finally, a person whose name in any year is put on the list for attendance as a matter of urgency, incurs no disability. The significance of this will be seen presently.

From the administrative point of view this system presented certain inconveniences. In the first place, it was impossible to make an exact estimate of the sum which should be allotted for the service in the Budget framed at the beginning of the year. It might involve a charge considerably in excess of anticipations. In the second place, the prefects complained sometimes that the doctors paid

an unnecessary number of visits; they were in fact stimulated to do this not only in their own interest and by the demands of patients who had nothing to pay, but also by the desire to make reprisals against the inadequate tariff imposed upon them. Undoubtedly there was a strain upon their conscience.

Under the second system, *système à l'abonnement*, the doctors receive an annual salary under contract; for instance, in a village with two doctors and 500 inhabitants, twenty of whom were entitled to medical relief, each doctor would receive annually for each of the twenty, whether they required medical attendance during the year or not, the sum of 1fr. 50c. The distance between the village and the doctor's house, the number of patients actually attended, and the number of visits paid were not taken into account. The poor person chose his doctor at the beginning of the year, and had no right to change during the year. The estimates for the annual expenditure on medical relief could be exactly settled when the Budgets were drawn up, and the prefects no longer complained that the doctors paid too many visits; on the contrary, they appealed to the doctor's humanity to be prodigal in this respect.

From the administrative point of view this system was ideal. Medically the doctors found it necessary to make the strongest protests. The mayors, since the communes had to defray part of the expenditure, thought it an ingenious idea not to put any names on the lists for medical relief at the beginning of the year; it would be time enough, they said to themselves, to put the name on the list as a matter of urgency when one of the persons entitled to assistance fell ill. On this plan the doctor did not receive 1fr. 50c. a year for each person entitled to medical relief, but only for each sick person he actually had to see. The fees, in any case ridiculously small, became altogether illusory. After a most desperate struggle, and a formal refusal to let ourselves be exploited in this way, our professional syndicates obtained two concessions. The estimate imposed on the communes is now based on the number of inhabitants, at the rate of 10 centimes a head, and is divided among the doctors in proportion to the number of persons entitled to medical relief on their lists. Attendance given to cases admitted as urgent must be paid for at the ordinary tariff, and the department throws the whole of these charges upon the commune. The mayor's little dodge was thus paralysed by a stroke of the pen, and the plan has come to be regarded as satisfactory, and either system, *à la visite* or *à l'abonnement*, thus improved, works well. There are some doctors whose practice extends into two departments who work under both.

Under both systems there is a special tariff for surgery and midwifery. There are still some difficulties with regard to this special tariff as to which a few details may be given. The fee for a confinement and three subsequent visits is 15 francs; for the application of forceps, 15 francs; for an operation for hernia, 20 francs; for the reduction of fracture of the leg, 10 francs, and so on. How, it may be asked, have we been induced to accept such starvation fees? In surgical cases the matter is simple enough, for it seldom happens that we cannot dispose of the patient by sending him to the nearest hospital. As to midwifery, we have to make the best of a bad job. Only I am bound to add that the number of artificial deliveries (for which an extra fee of 10 francs is paid) has in some districts risen to an unusual proportion. It is astonishing how many placentas are adherent when the tariff goes down!

But I must not be taken literally. Only very rarely is the exploitation of the profession by the State met by this kind of "*sabotage*." The immense majority of French practitioners, faced by a law which gives alms by putting its hands into their pockets, are content to follow the advice of their great and good master Potain, who said that it should be a point of honour with doctors to let themselves be dupes, believing that self-sacrifice is the oldest and purest diamond in Hygeia's crown, and that in a modern nation the State has the right to put its name down first in the list for medical relief.

THE United States Public Health and Marine Hospital Service has ordered Past-Assistant Surgeon C. H. Lavinder to Milan, with instructions to investigate pellagra in that district.

Correspondence.

LONDON CHILDREN'S TEETH.

SIR,—The deputation that waited upon Dr. Newman on March 23rd drew attention, among other defects in the scheme of medical treatment of the London County Council, to "the absence of any provision for dealing with defective teeth"; and your leading article entitled "A National Emergency" characterized this exclusion as "remarkable and scandalous" in the face of the statistics that have been accumulated by members of the British Dental Association and others. These epithets would not be too strong if there were any likelihood of the omission of dental treatment being other than temporary, and caused by a desire on the part of the authorities to deal first with those diseases that are less prevalent, and therefore more manageable under the opportunist scheme now being tried in various hospitals.

It is rather curious, however, if the very magnitude of the evil should be held to be a reason for delay. Statistics have shown beyond cavil that from 70 to 90 per cent. of elementary school children suffer from defective teeth. Since the idea first gained ground that diseased teeth and septic mouths were the direct cause of many serious affections, clinical experience and scientific investigation have demonstrated its truth; to enlarge on this point in your pages would be but a waste of space. It may be stated briefly, without fear of contradiction, that diseased teeth in children are responsible for much pain and misery, loss or waste of school time, disordered nutrition, and secondary disease of other organs; the evil effects of insufficient masticating power and of oral sepsis on physical development during the period when growth should be most rapid persist throughout life. Indeed dental disease, by reason of its prevalence and far-reaching effects, is really the most important of the diseases now being considered by Education Authorities and presents a problem of truly national importance.

Surely if there is any object on which the expenditure of public money is justified, it is that of providing that the children who cannot help themselves now, but who must before long join the struggling throng of workers, have a reasonable chance of reaching maturity equipped with such health and strength as inheritance has potentially endowed them with. To try and cram knowledge into the brain of a child with a diseased and stunted body is but a cruel mockery; and to provide food for a child while neglecting the teeth to eat it with is not much more sensible.

Even on the score of economy, it is extraordinarily difficult to make people understand that prevention is cheaper as well as better than cure, and that it costs less to the community to ensure for a child, as far as may be, the ability to earn its own livelihood in later years than to keep it when an adult more or less constantly in hospital, infirmary, workhouse, or even prison, on account of neglect in childhood. It is, I suppose, too much to expect that one public body should spend money in order to save the expense of another department of State or diminish the demands on charity; and this question of the children's teeth affords one more example of the need for the co-ordination of the public health service in place of the existing chaos of divided and independent responsibility.

The deputation to Dr. Newman emphasized very strongly the objections on principle to the present system adopted by the London County Council of subsidising voluntary or charitable agencies. Although I fully agree with the views put forward by the members of the deputation, it is unnecessary for me to enlarge on them in connexion with the teeth, because such a method is not likely to commend itself to the dental hospitals of London; these institutions already have as much work as they can cope with.

The only method of dealing with the teeth is by means of private practitioners or specially appointed dentists. In some cases it may be possible to send the children to the "recognized surgery" of a dentist, but this is not a plan likely to find general acceptance; and the institution of clinics, where one or more dentists might attend to afford treatment at stated hours, is the only ultimate solution of the problem. The deputation referred to the

medical clinics that are being organized in Wandsworth, Hampstead, etc.; it need hardly be said that the rooms of such institutions could be easily adapted for dental treatment.

It is unfortunate that the word "clinic" should have come to connote in the minds of some people elaboration and expense; in reality efficiency is compatible with simplicity and cheapness, and under any system the stipend of the dentist himself must be the greater part of the total expenditure. I may also remark, on the question of expense, that the amount of work to be done, which by its magnitude appals some educational authorities, would be greatly reduced by attention at an early age; the ravages of dental caries would thereby be checked. But in any case the gravity of an admitted evil is a strange reason for leaving it alone.

Dr. Newman, in replying to the deputation, was at much pains to show how aggrieved would be those medical men who might not be appointed to a clinic, and that on this ground the clinic was as objectionable as the subsidised hospital. Apart from the other objections to rate-aided charity, the conditions do not appear to be very similar, and Dr. Newman would be well advised to accept the assurances of the members of the deputation that friction of that kind would be unlikely to occur.

But again I may point out that in the case of the teeth the circumstances are somewhat different. I can safely say that dentists are not likely to complain if they are not appointed for this work; rather might it be expected that trouble would be found in getting enough dentists to do it. But I do not apprehend this difficulty either; the question has interested the dental profession for many years, and I have confidence in a sufficient number of men coming forward to help in what they regard as a national work, provided remuneration is given at a reasonable rate. Medical men who minister to the public health are still underpaid in comparison with other public officials, but the time has fortunately gone by when the hardly gotten skill and knowledge of medical men and dentists can be ruthlessly exploited by public bodies; the well-known charity of the doctor towards the poor is less liable to abuse than formerly; and in the case of these new appointments it is to be hoped that Education Authorities will endeavour to get good work done by offering adequate payment.—I am, etc.,

London, W., April 4th. NORMAN G. BENNETT.

DYSMENORRHOEA.

SIR,—From my somewhat limited experience of the various affections grouped together under the title of "dysmenorrhoea," I have found the most efficient medical treatment to consist of a thick layer of cotton-wool well sprinkled with gin or whisky (51 to 59 per cent. by volume of alcohol), and fastened on with a binder, the patient remaining in bed for awhile.

I notice that in the JOURNAL of April 2nd Drs. Weatherhead and McNamara vigorously condemn the advocacy by Dr. Gibbons of laudanum as an external application in these cases, and apparently all three of these gentlemen have been obsessed with the importance of the opium contained in the preparation, and have overlooked the claims of the familiar "Paddy's eye-water" also contained therein. Dr. Hale White—quoted by Dr. Weatherhead—says, of the external action of alcohol, that "if evaporation is prevented in any way . . . having passed through the epidermis, it dilates the vessels, causes a feeling of warmth, and produces a *rubefacient* effect."

This I have no doubt is also the action of laudanum. I may say that I was taught the value of the external use of alcohol in such cases by a patient who suffered very severely from premenstrual and menstrual pain. She had endometritis, and, I believe, also adhesions of the left ovary, as at occasional menstrual periods there was severe neuralgic pain in that region, superadded to the colicky pains (always present at these times) radiating across the lowest part of the abdomen. Before seeing me she had been in the habit of lying on the bed when the pain was grievous, and occasionally pouring a few drops of gin into her navel. This, combined with a little internally, was sufficient to subdue the pain. I may say that I stopped the internal administration of the drug, and found that, if used externally in the manner indicated above (along with glycerine vaginal plugs), the result was satisfactory.—I am, etc.,

Manchester, April 2nd. ANDREW S. MCNEIL, L.R.C.P.S.E.

P.S.—Although I have travelled a little in China, I have not come across the treatment of prolapsus uteri mentioned by Dr. McNamara, and can only suppose that he gives us this little joke to point the fact that opium acts on the brain cells.

SIR,—I gladly answer the courteous letter of Dr. Ralphs in your issue of April 2nd, and I should like to say that I fully appreciate and entirely agree with his remarks concerning the measurement of the uterus by the sound. But, as I have long since noticed this increase in the size of the uterine measurement in association with dysmenorrhoea, I have for many years been careful in taking it, for all know how easy it is to be inaccurate when dealing with fractions of an inch. The size of the uterus is taken in every case on which I operate immediately before commencing the dilatation, so that the patient is under an anaesthetic, and the measurement can be made with ease and accuracy. I believe there is hypertrophy of the uterine muscle, which I explained by saying, "It is probable that the continued contraction of the uterus causes a slight amount of hypertrophy of muscular tissue; at any rate, the cavity tends to become elongated." It is for this reason—a result of my own clinical observation—that I reject Theilhaber's theory; but, of course, a badly developed uterine muscle may be associated with dysmenorrhoea, although not, in my opinion, the cause of it.

I may say, with reference to the interesting letter of Dr. Chevers concerning the simple theory that the cause of these spasmodic painful contractions of the uterus is due to a cervix of small lumen, I have gone so fully into that in my lecture that I cannot trespass more on your space now.

I would say, in answer to the other letters, that I have ordered 1 drachm of brandy—not a large quantity—only if a second dose of phenacetin is required, on account of the depressing action on the heart, but many patients do not require a second dose, and therefore no alcohol is given. I certainly am as keenly opposed as any one to the treatment of dysmenorrhoea by alcohol, and if coal-tar analgesic remedies are not used no alcohol is required.

As to the ease given by the application of opium or aconite and belladonna to the abdomen, the skin of which is often very sensitive, clinical experience must come before everything else, and I am quite certain from observations made years ago, assisted by an intelligent sister at the Grosvenor Hospital for Women, that such applications, with or without heat, in deep-seated abdominal pain, explain it how we may, afford relief. It is not always convenient to obtain heat, for pain may come on at any time during the night, but if hot applications can be had they are usually soothing, yet the heat can only act on the skin in the same way as applications, the fascia, muscles, etc., being between it and the peritoneum. Dr. Gee, whose accuracy of observation is well known, says in a lecture on "Signs of Acute Peritoneal Diseases":

> As to tenderness upon pressure of the abdomen, is it not a mistake to suppose that it is pressure upon the peritoneum alone which brings on pain? The skin also is tender, and is sometimes tender to the gentlest touch. In bygone days I have attempted to shave the head of a patient suffering from acute meningitis, and have been compelled to desist on account of the exquisite tenderness of the scalp. Indeed, tenderness of the skin is apt to follow great pain of any underlying part, and I commend the consideration of these facts to those who find a difficulty in believing that leeches or blisters applied to the skin can possibly affect a deeply-seated part with which the skin has no obvious connexion.

—I am, etc.,

London, S.W., April 5th. R. A. GIBBONS.

MINER'S NYSTAGMUS.

SIR,—The only excuse I can offer for entering on this subject is that I live in a colliery district. Whether the fact that Dr. Harrison Butler did not mention errors of refraction as a cause directly was simply an error of omission, or whether he considered it a contributing cause, but thought it unnecessary to state, I think matters very little. As in other discussions, one is very apt to believe greatly in himself and his own limited experience—for limited it is.

Dr. Carruthers,[1] so far as I can judge, has simply concluded that miners neglect their eyesight because a few parents have said something about their children and the pit. Now that would lead one to think nystagmus was a modern disease or ailment; but I am certain Dr. Carruthers will agree it is not. As it is, some people avoid glasses because of the Compensation Act. Again, this Act is new (comparatively), and cannot account for nystagmus before the Act, because miners would have no fear about wearing glasses or having their eyes examined. I agree with Dr. Harrison Butler that there is no muscle fatigue of the eye, and disagree with Dr. Carruthers when he suggests that all the man's muscles are in use. I agree that a serious error of refraction may contribute, but I do not believe it to be the cause; personal experience in colliery districts has not taught me so. It is not safe to compare or draw an analogy between nystagmus and a physiological tremor of the hands.

As to the tissues being young and able to resist, I may state that all the cases I have seen have been men under 40; some I have seen over 50, but they are not so numerous.

In conclusion, might I suggest that the cause might as easily be found in the retina as anywhere else?—I am, etc,

Doncaster, March 22nd. T. L. ASHFORTH, L.R.C.P.

GENERAL PRACTITIONERS AND POOR LAW REFORM.

SIR,—I feel sure the great majority of country doctors will agree with Dr. Hick in his reply to Dr. Cooper. In the country a working man averaging £1 a week would feel himself insulted if classed as an indigent; he is very well off, and if he has a careful wife can soon have a nice nest egg. There are few young people who cannot afford a bicycle, and in a fair number of instances the father and mother also. It may surprise Dr. Cooper to be informed that there are cottages with an income of over £100 a year, and yet no one man earning £1 a week. Take for instance a father and two adult sons with £45 a year each; total, £135 a year for one cottage. This is no solitary instance, and I have no doubt that many can improve upon it. Are these people to be encouraged to come upon the ratepayers for their medical treatment? There are too many well-meaning people about who do not understand their subject, and in their desire for the welfare of the poor would destroy their sturdy independence.—I am, etc.,

Fulbourne, Cambridge, April 2nd. F. L. NICHOLLS.

SIR,—Most of us, I should think, will differ from Dr Hick and agree with Dr. Cooper that the earner of less than £1 a week is quite unable to pay for medical attendance. That such persons do (occasionally—not "readily") pay a doctor is a fact, but at what cost? Certainly at the cost of leaving some other creditor unpaid, or depriving themselves or their children of decent food or clothing.

But Dr. Hick misses the whole point of Dr. Cooper's article, which is a suggestion for compulsory medical attendance insurance which would not "sweep them all into" but keep them all out of "the arms of the Poor Law."

Dr. Hick with more reason might have taken exception to paragraphs (*d*) and (*e*), but objection even here would be beside the point. Life insurance is not restricted by consideration of a man's income, and there is no reason why sickness or medical attendance insurance should be so restricted.

Moreover, it is no concern of ours what the premium in each class of worker should be; this is the business of the insurance company and its shareholders—in this case the nation, of which we are part; but we cannot in medical matters speak as citizens, nor in national matters as doctors except perhaps as expert advisers.

I hope Dr. Cooper's proposals will be taken up by the Association. The scheme, if carried out, would preserve intact the relation of private patient and family doctor, and would simply transfer from the latter to the State the business and risk of our present insurance (private clubs, friendly societies, and all contract and cheap practice, in which the medical man is the insurance company forced by economic pressure to accept the risk at inadequate premiums).—I am, etc.,

Bristol, April 2nd. HARRY GREY, M.D.

[1] BRITISH MEDICAL JOURNAL, March 12th, 1910, p. 666.

SIR,—May I be permitted a few lines in answer to Dr. Hick's letter in the issue of April 2nd, p. 848? He accuses me of endeavouring to deprive him of nine-tenths of his patients. I assure him it is my very last wish to deprive either him or any of my fellow practitioners of a single patient. What I am striving for is that we shall be paid for our work. Does Dr. Hick assert that all, or even the majority, of his patients earning from 15s. to 18s. per week who have wives and families to support pay him his proper fees? If so, his experience is exceptionally fortunate. I thought I was fixing the limit of the indigent class as low even at £1 per week. Mr. Rowntree, in his book on *Poverty*, p. 54, speaking of people with incomes of 21s. and under, says: "Practically the whole of this class are living either in a state of actual poverty—that is, their total earnings are insufficient to supply adequate food, clothing and shelter for the maintenance of merely physical health—or so near to that state that they are liable to sink into it at any moment. They live constantly from hand to mouth. So long as the wage earner is in work the family manages to get along, but a week's illness or lack of work means short rations or running into debt, or more often both of these." Mr. Booth, who has had an even wider experience amongst the poor in London, gives, I believe, similar testimony.

The gist of my proposals was that by a system of State-aided sickness insurance these people would be covered for all forms of sickness or accident, so that adequate fees would be secured for the attending practitioner. It was only in cases where nothing could be paid at all for medical attendance that I reluctantly consented to the patients being handed over to the Poor Law, or else, obviously, the practitioner would have to do the work for nothing. My suggestions were only tentative, however, and I left the details to be threshed out in the Divisions.—I am, etc.,

Bowdon, Cheshire, April 5th. P. R. COOPER.

SIR,—I should have written last week concerning your attack upon the Minority Report in your leading article entitled "A Poor Law Bill and a Circular," had I not felt sure that the matter would have been taken in hand by someone else better qualified than I.

It seems to me unfortunate that our JOURNAL should hold a brief against the Minority Report before the Divisions have had any opportunity of expressing their views on the subject. Surely it would have been fairer had you held an impartial position until the views of the members of the British Medical Association had been ascertained.

Again, it seems to me that prejudice alone could cause you to say that the Minority scheme would set up "an intricate and untried machinery, including four destitution committees"!

Is the local education authority a "destitution committee"? Is the local health authority a "destitution committee"? Is the local lunacy authority a "destitution committee"? Is the local pension authority a "destitution committee"? Are they all new and untried? Far from being "untried destitution committees," they are, for the most part, already doing good work towards the prevention of destitution, and the Minority scheme proposes to make further use of them in order completely to secure this most desirable end.

The Majority Report, for which you seemed to hold a brief a short time ago, did, indeed, set up a destitution authority far more objectionable (because far less democratic) than the Poor Law guardians whom it condemned even more unreservedly than the report of the Minority. But one great object of the Minority has been to prevent overlapping by the abolition of the Poor Law guardians and to transfer the responsibility for the cases now dealt with by them to the authorities dealing with the *causes* of destitution. Thus, the children are handed over to the local education authority, the sick and infirm to the local health authority, the feeble-minded and mentally defective to the local lunacy authority, and the pensionable aged to the local pensions authority; and it will be the duty of the Registrar of Public Assistance or of the specially appointed Public Assistance Co-ordination Committee to prevent a family receiving help from one of

these committees without the knowledge of one or more other committees from whom they were already in receipt of help.

To say that such a scheme "creates more overlapping than exists at present" shows, to my mind, a hopeless failure to realize how much overlapping and waste at present exists.

Whilst the Majority scheme and that of the Local Government Board aim at the alleviation of destitution, the Minority scheme aims at its prevention. This is a large order, I know, and must of necessity cost a great deal of money; but the money so readily available for Dreadnoughts would surely be better spent on the attainment of this consummation so devoutly to be wished.—I am, etc.,

Manchester, April 4th, E. VIPONT BROWN, M.D.Lond.

*** Our correspondent's appeal *ad misericordiam* on behalf of the Minority Report cannot be admitted. However admirable the scheme it embodies may in their opinion be, its friends surely cannot claim that it is faultless. The propaganda of the National Committee to Promote the Break-up of the Poor Law is very active, and the profession must not allow itself to be bluffed. If it is to accept the scheme, it must be after full consideration of all that can be said against as well as for it.

CONSULTANT, GENERAL PRACTITIONER, OR HALF-AND-HALF?

SIR,—I regret to note that "Enquirer" has "retired hurt" from the controversy which he was responsible for starting in the BRITISH MEDICAL JOURNAL under the above heading.

The merits of the half-and-half system had been so clearly and confidently set out by "Est Modus in Rebus" that I had hoped "Enquirer" would feel that a fitting opportunity had arisen for seeking more light by addressing a few pertinent questions to the doughty champion of the cause. Allow me to play the part I hoped "Enquirer" would have taken.

I think I may take it that the great principles underlying the half-and-half cause, as laid down by "Est Modus in Rebus," and practised by a considerable number of medical men who claim the title of "consultant," are:

1. That when a patient comes to the consulting room of a consultant, independently of his ordinary medical attendant, the consultant is justified in undertaking his independent treatment.

2. That when a patient is sent to the consultant's consulting room by his usual medical attendant or is accompanied by him, the consultant is not justified in undertaking his independent treatment.

3. That under no circumstances is a consultant justified in undertaking the independent treatment of a patient in the patient's own home.

Now, Sir, the questions I should like to put through "Est Modus in Rebus" to those who adopt this method are devised to elucidate the difference in principle which ought to guide us in our behaviour—first, to a patient who comes to us and one who asks us to come to him; and, secondly, to a patient on whose behalf our advice is sought by his medical attendant, and one who seeks for it himself.

I. Why will you treat independently any patient who comes to you and not one who asks you to come to him?

(*a*) Is it because the man who comes to you is likely to be less seriously ill, and, therefore, only in need of one head to deal with his case instead of two?

(*b*) Is it because he is likely to be more seriously ill and therefore requires the unremitting skill and attention which you alone as a result of your special experience are able to give him unhampered by his usual medical attendant?

(*c*) Is it because your fee for going out to see a case is higher than your fee for seeing a case at your house, and therefore the number of cases you lose by refusing to go to them independently is small?

(*d*) Is it because your visits to another man's patient would be easily observed by the other man to the detriment of your reputation as a consultant, while the other man's patient's visits to you are not likely to be recognized?

(*e*) Is this distinction, in fine, determined by considerations having as their basis the benefit of the patient or the benefit of yourself?

(*f*) Is there any argument, such as the right of the patient to be treated by whom he likes, the advantage to the patient of the undiluted special skill of the specialist, which is not equally applicable to the patient lying ill in bed and the patient whose powers of locomotion are still unimpaired?

II. Why will you treat independently the man who comes without his doctor's knowledge and refuse so to treat the man who is sent to you by his doctor?

(*a*) Is it because there is likely to be any difference in the nature of the ailment from which the two classes of patients are suffering which renders a different method of procedure necessary?

(*b*) Is it because the case sent by the doctor is pretty sure to be within your speciality whilst the other as likely as not is outside your range of practice?

(*c*) Is it because the doctor who sends you a case is a "friend" and the other man's doctor may not be?

(*d*) If you feel that you must not be hampered in your treatment by insisting on the unknown doctor being allowed to co-operate, how can you justify to the other patient the fact that you allow such hampering when the doctor sends you the case?

(*e*) Is it because you know that to take the sent case entirely out of the doctor's hands would surely destroy your chance of having any more patients sent by the same doctor?

(*f*) Are you not possibly biassed in thinking that the patient's interest is served by your independent treatment when he comes alone, because thereby you are likely to receive from him more fees, and in thinking that the patient's interest is served by the doctor's co-operation when the case is sent, because by such procedure you are likely to receive more patients from the same source?

I venture to submit these questions in all seriousness to "Est Modus in Rebus" and those who honestly think with him that the half-and-half system is the best for all. Honestly I think that it is not, and must confess myself a "whole-hogging" pure consultant. I believe in a united profession to enable us to do our best for the public, and think that the half-and-half system is very detrimental to amicable professional relationship.—I am, etc,

April 3rd. PROFESSIONAL UNION.

"TRADING ON NAMES," AND "ST. WINEFRIDE'S WELL."

SIR,—Your leading articles of March 12th contain two very interesting paragraphs which at once bring to my recollection two such examples that came under my own observation.

Some years ago it happened that several of my patients who had derived considerable benefit from ungt. pagen. happened to have taken their prescription to a certain chemist and eulogized the treatment to such an extent that he promptly put "Rockliffe's Eye Ointment" on the market. Hearing of this, I sent a servant to procure a sample and to make inquiries, and was informed of the miracles the ointment had performed, and, further, that he had had a tremendous sale, having just sold six boxes. (N.B.—Three to my detectives.) Each box of ointment was labelled in large letters, "Rockliffe's Eye Ointment," and followed by a list of practically every superficial inflammation of the eye, which its contents cured.

A lawyer's letter obtained a public apology in the local press, etc, and the payment of £5 to the Royal Infirmary.

As regards St. Winefride's Well, I have but little doubt that many miracles have been achieved by these healing waters in neurotic patients, but in one case of my own the facts are worth remembering, especially when two qualified medical men champion the "healing waters." The patient was a devout Lady Superior, with traumatic cataract, who, after having been needled and the lens rapidly absorbing, determined to try these "healing waters" I tested her sight prior to her departure, and assured her she would improve as rapidly at home as risking the waters *in November*. Nevertheless, her friends persuaded her to go, and during the month's treatment she derived considerable benefit and was practically healed *by the waters (?)*, but unfortunately she received a severe chill, returned home, and died from double pneumonia.

four days afterwards. A similar case, said to have been treated without benefit at Newcastle Infirmary, but of a neurotic nature, occurred (and I believe was reported in the JOURNAL) about the same time. I should be glad to hear of any genuine cures effected by these waters and authenticated by any reasonable medical man.

The day of miracles *non est*, and the sooner the British public grasp this point the better.—I am, etc,

W. C. ROCKLIFFE,
Hon. Consulting Ophthalmic Surgeon, Hull Royal Infirmary.

Hull, March 15th.

Universities and Colleges.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

A MEETING of the Senate was held on March 16th.

Recognition of Teachers.

The following were recognized as teachers of the university in the subjects indicated:

King's College.—Mr. J. E. S. Frazer (Anatomy), Dr. David Waterston (Anatomy).

Westminster Hospital.—Mr. Stanley Dodd (Midwifery), Mr. J. A. B. Hicks (Pathology), Mr. Dudley W. C. Jones (Medicine).

London Hospital.—Mr. M. W. Flack (Physiology and Pathological Chemistry).

St. Mary's Hospital.—Dr. D. C. L. Fitzwilliams (Clinical Surgery), Dr. R. H. Miller (Clinical Medicine).

Francis Galton Laboratory for National Eugenics.

The cordial thanks of the Senate were voted to Sir Francis Galton for a further donation of £500 for the maintenance of the Francis Galton Laboratory for the Study of National Eugenics during the year 1911–12.

Appointments.

Mr. E. A. Gardner, M.A., Yates Professor of Archaeology, was appointed to the newly-created post of Public Orator.

Return of Examination Fees.

It was resolved that the regulations relating to fees payable by candidates who withdraw from an examination should be amended to read as follows:

> The fees of candidates who withdraw before the last day of entry for any examination will be returned to them.
>
> A candidate whose name has not been so withdrawn but who does not present himself for the examination for which he has entered, will be allowed to enter for the next examination of the same kind on payment of half the ordinary fee, provided that, if the ordinary fee exceed £5, the fee for entering the next examination of the same kind will be £2 10s.
>
> [Candidates who retire after having presented themselves for an examination, or who fail to pass, will be required to pay the full fee when they next present themselves for such examination.]

Appointment of Representatives.

Dr. H. R. Kenwood and Dr. W. J. R. Simpson, C.M.G., have been appointed to represent the university at the International Hygiene Exhibition to be held in Dresden in 1911.

Presentation Day.

The presentation of graduates will take place at the university on Wednesday, May 18th, at 3 p.m.

Advanced Lectures in Physiology.

The following courses of lectures are announced during the third term:

1. Eight lectures at the university, by Dr. N. H. Alcock, on the physiology of the peripheral nerves, on Tuesdays at 5 p.m., beginning on May 3rd.

2. Eight lectures on the chemistry of the chlorophyll, by Dr. S. B. Schryver, at University College, on Fridays, at 5 p.m., beginning on May 6th.

3. Eight lectures on the mechanism of co-ordination in the central nervous system will be given by Dr. Gordon Holmes, at University College, on Mondays at 5 p.m., beginning on May 9th (in place of the course arranged to be given by the late Dr. Page May).

4. Three lectures by Dr. F. W. Mott, at King's College, on the influence of the cerebrum on speech, on Mondays at 4.30 p.m., beginning on May 23rd.

5. Four lectures by Dr. J. S. Haldane, F.R.S., at Guy's Hospital, on secretion of gas, with special reference to the lungs and swim bladder, on Thursdays at 4 p.m., beginning on May 5th.

6. Four lectures on the influence of organic chemistry on physiology, by Dr. F. G. Hopkins, at Guy's Hospital, on Wednesdays, at 5 p.m.

Courses 1, 2, and 3 have been recognized by the Senate as courses of advanced lectures which a candidate at the B.Sc. (Honours) examination in physiology may name for part of his practical examination.

Further information can be obtained on application to the different colleges.

Examination Results.

The following candidates have been approved at the examinations indicated:

SECOND M.B., B.S., *Part II.*—G. S. Applegate, H. W. Batchelor, T. I. Bennett, L. G. Bourdillon, G. J. Bowen, Kathleen M. Cole, B.Sc., P. C. Cole, J. M. Curé, H. W. Davies, *Henrietta F. Davies, R. D. Davy, Gertrude Dearnley, G. R. Dobrasian, I. Feldman, W. B. Foley, D. M. Gibson, C. E. A. Goddard, Una Griffin, T. H. Holroyd, R. L. Horton, F. J. Humphrys, G. W. B. James, C. M. Jones, Charlotte G. Judge, S. Keith, F. H. Kelly, Constance Leetham, Dorothy C. Logan, Margaret J. M'Enery, T. H. Martin, *G. S. Miller, W. J. Morris, J. F. O'Connell, H. W. Parrott, C. L. Pattison, C. J. H. Pearson, J. A. Poole, T. W. Powell, W. W. J. A. Quine, M. Radford, F. H. Rees, J. F. G. Richards, G. F. Rigden, W. Robinson, H. C. Rook, H. Rowntree, W. Salisbury, E. G. Saunders, W. H. P. Saunders, A. L. Shearwood, P. Smith, R. Swyer, H. E. Thorn, A. J. C. Tingey, A. J. Tonkinson, Mary A. van Ingen, J. Vaughan-James, W. H. Vincent, V. D. C. Wakeford, H. Webb, N. T. Whitehead, P. Whitehead, O. R. L. Wilson, J. E. Wood.

* Distinguished in Physiology.

SECOND M.B., B.S. (*Organic and Applied Chemistry*).—W. P. C. Abeyedeera, Elizabeth L. Ashby, G. C. G. Baldini, F. M. Barnes, W. C. P. Barrett, Irene Bastow, F. V. Bevan-Brown, Marjorie A. Blandy, J. Bostock, Alice D. Brooks, F. C. S. Broome, W. Burt, H. G. Chaplin, R. J. Clausen, A. S. Cohen, Dora C. Colebrook, F. Collar, J. K. Davies, P. V. Davies, W. L. G. Davies, W. T. Davies, F. H. Dodd, A. R. C. Doorly, C. H. Edwards, A. F. El-Hakim, Pattie R. Elliott, R. Ellis, P. O. Ellison, H. W. Evans, J. T. E. Evans, H. J. O. Ewing, G. Finch, S. A. Forbes, H. L. G. Foxell, *C. H. Gould, F. A. Grange, M. Gross, *C. F. Hacker, A. C. Hancock, Mary E. Harding, D. T. Harris, J. R. Harris, C. C. Harrison, *S. S. B. Harrison, H. J. Hoyte, C. E. Jenkins, Rosalie Jobson, S. B. King, L. M. Ladell, K. W. Lewis, I. H. Lloyd-Williams, N. P. L. Lumb, R. G. Lyster, *Fede M. Mackenzie, D. M. MacManus, Edith M. Martland, J. N. Mehta, A. N. Minns, J. Y. Moore, H. R. Parsloe, P. T. Patel, J. L. Priston, J. A. Robinson, W. E. R. Saunders, G. D. Shann, H. R. Sheppard, R. Silcock, R. H. Simpson, J. S. Sloper, L. M. Smith, F. G. A. Smyth, T. R. Snelling, E. S. Sowerby, C. W. Sparks, J. E. Stacey, Grace Stapleton, J. Stephenson, W. E. Taylor, Naomi Tribe, E. H. Walker, H. J. Wallace, J. G. Wardrop, G. N. Welsford, G. R. C. Wilson, A. G. Winter, H. G. Winter, D. H. D. Wooderson.

* With distinction.

UNIVERSITY OF LIVERPOOL.

THE following candidates have been approved at the examinations indicated:

SECOND M.B., CH.B.—*Part A:* R. G. Barlow, A. W. Bigland, A. V. Glendenning, R. Lee, J. H. Mather, M. T. Morgan, F. C. Plummer, Miss F. M. B. Price, H. Seddon, J. P. Thierens, F. Wilkinson, B. Williams, T. O. Williams. *Part B:* R. Heald, N. P. Laing, and T. H. Martin.

FINAL M.B., CH.B.—*Part I:* G. S. A. Bishop, I. C. Edwards, P. L. F. Nortjé, I. J. Williams. *Part II:* L. Buckley, J. A. Parkes, and J. F. Roberts.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examinations indicated:

FIRST M.B. (*All Subjects*).—*W. K. Russell, †E. R. A. Merewether, W. Bell, A. Butterfield, M. H. de J. Harper, R. R. Lishman, G. D. Newton, S. Thompson.

FIRST M.B. (*Elementary Anatomy and Biology only*).—C. Armstrong, W. J. Bowden, P. A. Clements, I. G. Cummings, G. B. Egerton, H. H. Elliot, S. Foskett, D. R. Jones, F. Metcalfe, F. J. Nattrass, E. C. G. Parker, Jane Penman, H. A. P. Robertson, P. Savage, J. C. Spence, R. L. Wright.

FIRST M.B. (*Chemistry and Physics only*).—A. C. Freeth, J. M. Phillips-Jones, F. S. Rood, M.R.C.S., L.R.C.P., E. K. Ryan.

FIRST M.B. (*Elementary Anatomy only*).—L. L. Armstrong, Mary L. Haigh.

THIRD M.B. (*Pathology, Medical Jurisprudence, Public Health, and Elementary Bacteriology*).—†H. Fairclough, †S. P. Bedson, B.Sc. Pass list: J. J. Brown, R. M. Barrow, R. G. Badenoch, J. W. Craven, W. L. Clements, C. Gray, J. K. J. Haworth, C. J. Henderson, W. G. Lidderdale, C. Mearns, B. B. Noble, R. W. Smith, J. A. C. Scott, W. A. Slater, R. V. Steele, Eleanor Walkinshaw.

* First-class honours. † Second-class honours.

The following were among the degrees conferred at a Convocation on April 2nd:

M.D.—H. M. Braithwaite, S. Nix, T. L. Wormald.

M.D. (For Practitioners of Fifteen Years' Standing).—J. B. Bate (West African Medical Staff), W. Black, R. Marshall, C. F. Rudd, P. N. Twomey.

D.Hy.—K. T. Matthews.

M.S.—F. C. Pybus.

M.B.—J. E. Dainty, C. Marks, C. M. Brown, B. G. H. Connolly, W. Sacco, C. S. Thompson, W. R. E. Unthank, C. L. Wigan.

B.S.—J. F. Bridge, B. G. H. Connolly, J. E. Dainty, C. Marks, W. Sacco, C. S. Thompson, W. R. E. Unthank, C. L. Wigan.

B.Hy.—E. C. Braithwaite, A. C. Greene, I. Hodgkinson, A. B. Raffle.

On the same occasion diplomas in public health were handed to the following:

E. C. Braithwaite, J. Buck, A. C. Greene, I. Hodgkinson, W. W. Martin, J. B. Patterson, Agnes M. Pringle, A. B. Raffle, Catherine M. Richardson.

ROYAL COLLEGE OF PHYSICIANS IN IRELAND.

AT a meeting of the Council on April 1st Messrs. Gibbon FitzGibbon and Arthur Norman Holmes were elected to the Fellowship of the College.

UNIVERSITY OF EDINBURGH.

DEGREES.

THE following were among the degrees conferred at a meeting of the Senate on March 31st:

M.B., CH.B.—T. A. Adams, A. Archibald, Janet Armstrong, W. M. Biden, E. O. Bowen, U. F. F. Brown, J. Cathcart, J. P. Charnock, B. R. Chopra, Lizzie M. S. Clark, Gladys H. Cook, H. A. Cookson, G. C. Dalton, F. A. Duffield, J. Eaves, A. H. Elmslie, F. S. B. Fletcher, V. H. Gordon, E. B. Hoffman, B.A., G. de C. Hugo, R. B. Macfie, G. M. Miller, W. A. Miller, Rhoda M. Murdoch, F. H. Noronha, J. E. R. Orchard, P. N. Pedersen, S. Pinion, P. Roytowski, A. C. Russell, M. W. Ruthven, T. C. Smith, J. G. Smyth, M. Stewart, L. W. O. Taylor, Mary M. M. Turpie, T. Welsh, S. Williams.

EXAMINATION RESULTS.

The following candidates have been approved at the examinations indicated:

FIRST M.B., CH.B.—C. W. Aikman, R. C. Aitchison, H. S. A. Alexander, R. H. Alexander, W. W. Anderson, C. Atkinson, J. H. Baird, S. K. Basu, E. G. von B. Bergh, S. E. Bethell, W. Bird, H. J. Brink, R. E. Cameron, F. Chand, S. C. Chatterjee, H. E. Collier, M. K. Cooper, J. W. Darling, W. Duguid, D. E. Francis, B.A., H. R. Friederichs, H. H. Gellert, A. W. Gunn, D. A. R. Haddon, J. H. B. Berry Hart, E. S. Hawkes, C. S. R. Hill, F. W. Hird, S. C. Huddlestone, J. H. G. Hunter, L. F. E. Jeffcoat, P. W. J. Keet, H. B. Kirk, C. G. Lambie, S. J. A. Laubscher, J. J. R. Mackenzie, C. F. Maclachlan, F. G. Macnaughton, G. T. Mowat, F. J. O'Reilly, G. S. Pirie, V. A. Rankin, C. D. Rogers, D. Rosie, A. R. Ross, B. Shires, H. C. Sinderson, C. H. K. Smith, E. T. Solomon, F. E. Stewart, T. J. W. Sveinbjörnsson, F. E. Tillyard, P. du Toit, H. A. Tren, T. B. Truter, J. M. Verster, H. P. W. White, J. B. Young.

SECOND M.B., CH.B.—T. M. Anderson, F. C. K. Austin, A. J. Ballantine, B.A., J. G. Bell, P. N. Berry, J. H. Boag, S. Bolton, W. N. G. Boxer, G. M. Brown, J. B. Cook, O. Cook, A. F. Cowan, Lucy D. Cripps, A. M. Davidson, *A. E. Delgado, Helen C. Dykes, D. O. Fairweather, S. Fenwick, A. K. Forbes, J. J. Gilchrist, J. G. Gill, C. Gordon, J. F. C. Haslam, T. P. Herriott, Julie E. Hoffmann, T. W. Jackson, F. N. Johns, I. W. Jones, *W. S. Lindsay, B.A., G. J. Linklater, Isabella M. Little, R. L. Lloyd, D. M. M. Lyon, M. R. L. Macaulay, E. F. W. Mackenzie, J. M'Kerchar, I. Maisels, J. W. Mathews, A. Mearns, R. W. Miller, S. Osborn, W. W. Phillips, B. Prasad, *E. D. Pullon, E. Sharpe, *A. W. S. Sichel, B.A., D. M. Smith, J. W. Steel, C. V. Thornton, *A. T. Todd, P. G. Tuohy, R. E. Walker, B. Weinbren, G. Wilson, P. C. V. Woudberg.

SECOND M.B. (Old Regulations).—J. P. Blockley, J. R. Bulman, F. G. Power, T. W. Smart.

THIRD M.B., CH.B.—W. J. Adie, J. R. Aeria, R. Aitken, A. A. Atkinson, M. L. Bangara, W. R. Bayne, P. W. P. Bedford, *H. Bedingfield, D. Bell, *A. Bennee, A. G. Biggam, H. F. Blacklee, R. B. Blair, A. Bloom, N. H. Bolton, J. R. Boyd, N. H. Brönnum, C. Burnham, *F. D. Cairns, W. Campbell, E. R. Carlos, M.A., B.Sc., A. B. Cheves, Lilian Cook, Effie M. D. Craig, D. H. D. Cran, D. A. Crow, P. L. Davies, J. S. P. Dickey, B.A., R. C. Dickson, R. Dow, J. M. Drew, B.A., A. Eprile, J. Erlank, W. E. FitzGerald, K. A. Gilchrist, J. M. Gillespie, R. G. Gordon, B.Sc., J. V. L. Grant, J. W. Gray, M.A., A. Groenewald, T. Hayhurst, J. Hewat, S. Hodgson, H. F. Holmden, H. J. Hopps, J. L. Huggan, A. Jassinowsky, W. H. Johnston, B.A., H. A. Khin, A. L. Krogh, A. Langwill, S. F. Lee, G. L. Leggat, T. Lindsay, A. H. Louw, *F. R. Luke, Eva M. Lyon, I. Macfarlane, W. S. M'Laren, *P. M'Nab, J. G. MacQueen, C. D. Maitland, B.Sc., *L. B. C. Marksman, J. S. S. Martin, *W. C. B. Meyer, B.A., A. B. Mitchell, A. E. Moore, J. T. Morrison, R. V. Morrison, R. C. Moses, J. M. Murray, T. P. Noble, A. C. Price, H. H. Proudfoot, Mary D. Rankine, G. Richardson, *T. C. Ritchie, B.Sc., H. A. Von Ronn, M. Rougvie, L. Sammy, R. G. Shaw, S. F. Silberbauer, W. D. D. Small, B. M'Call Smith, S. S. Sokhey, B.Sc., B. H. H. Spence, J. J. Stander, H. H. Stewart, R. M. Stewart, S. D. Stewart, W. Stewart, G. Sutherland, J. H. Tennent, C. M. R. Thatcher, F. L. Tulloch, A. L. Urquhart, P. Vieyra, G. H. W. de Vos, C. D. Walker, C. C. Wang, H. W. Webb, H. Whitaker, H. E. Y. White, J. B. Wilkie, L. S. Willox, D. M. Wilson, C. Y. Wong, W. Q. Wood.

THIRD M.B. (Old Regulations).—M. J. Dolan, S. Hodkinson, H. W. Kerrigan, J. Lamberton, A. S. Loutit, B.A., R. M'Adoo, J. T. Mackenzie, R. J. E. Paterson, M. J. Da Rocha, K. R. Shaw, R. B. M. Yates.

FINAL (*Forensic Medicine and Public Health*).—H. H. Brown, W. G. Coltart, R. B. Davidson, H. H. C. Fuller, A. Galletly, R. Govan, M.A., M. Greenberg, E. S. B. Hamilton, A. C. Heard, Hannah M. Irving, B.Sc., W. D. Kirkwood, D. J. M'Afee, P. A. M'Cool, E. W. Richards, T. Singh, J. C. Smith, M.A., D. L. Theron, S. J. A. Hall Walshe.

FINAL (*Midwifery*).—A. Baldie, A. G. Brown, M.A., H. H. Brown, G. J. Carr, B.A., T. Caul, W. G. Coltart, T. F. Craig, J. Danee, R. B. Davidson, R. W. Davies, W. N. Davies, M. R. Drennan, M.A., W. A. Dunn, J. M Elliot, A. J. Ewing, M.A., Annie G. Fergus, A. G. Forbes, A. Galletly, M. E. Goode, R. Govan, M.A., M. C. R. Grahame, M. Greenberg, E. B. Gunson, E. S. B. Hamilton, K. G. Hearne, Janette T. Hill, D. van V. Hoffman, N. J. Hofmeyr, B.A., C. C. Iles, T. D. Kennedy, J. C. J. Khambatta, W. D. Kirkwood, E. W. Lawrence, D. J. M'Afee, W. V. Macaskie, P. A. M'Cool, J. R. M'Gregor, E. C. Mackay, M.A., D. M'Phail, D. C. Monro, F. L. Moore, B. B. Morgan, D. M. Morison, H. O'H. O'Neill, J. J. Pace, H. F. Panton, C. K. Pole, A. H. Porter, K. A. Rao, F. W. Rayment, E. G. Richards, E. W. Richards, D. T. Richardson, W. R. Ridley, T. R. Sandeman, J. W. Senter, A. Simpson, T. Singh, K. F. Sonntag, N. W. Stevens, R. K. S. Sutherland, R. H. Tait, D. L. Theron, L. R. Thomson, P. H. du Toit, J. Watson, S. H. Wilkinson.

FINAL (*Surgery and Medicine*).—P. Allan, R. M. Allan, F. G. Bell, O. H. Blacklay, C. J. G. Bourhill, W. Brand, B.A., J. C. Brash, M.A., B.Sc., G. S. Brock, J. F. Brown, G. R. Bruce, M.A., G. Burnet, J. Le F. C. Burrow, E. H. Cameron, W. W. Carlow, M.A., W. D. Chambers, A. Cochrane, Lucy E. Davies, J. Drummond, Isabella G. Emslie, W. J. Feltham, E. L. Ferguson, F. P. Fouche, F. R. Fraser, B.A., A. Galletly, Annie C. Greenep, J. D. Gunn, B.A., E. B. Gunson, E. S. E. Hamilton, D. S. Harvey, W. R. Clayton Heslop, D. van V. Hoffman, J. Honeyford, A. Hood, A. J. G. Hunter, J. Hunter, G. J. Joubert, J. C. J. Khambatta, Lina Kurz, E. C. Lang, D. T. M. Large, R. S. Lawson, M.A., J. P. Litt, J. M. Logie, D. Murray Lyon, W. C. Lyons, J. C. MacCallum, M.A., G. Macdonald, J. D. M'Ewen, M.A., K. B. MacGlashan, Marion Macintyre, E. C. Mackay, M.A., P. W. Maclagan, D. J. MacLaren, W. MacNaughton, D. M'Phail, N. F. Mann, H. M. Mills, S. M. Mokand, V. P. Mondon, A. A. Morison, D. M. Morison, M. M. Morrison, O. A. J. N. Muriset, C. C. Murray, W. P. Murray, H. G. G. Nelson, P. J. Olivier, Dora E. Paterson, W. C. Paton, M.A., J. F. Penman, A. Z. Philips, L. T. Poole, A. H. Porter, S. H. Pugh, N. Purcell, A. W. Rattrie, W. D. Reid, D. T. Richardson, Lizzie Rose, W. Russell, T. M. Sellar, W. A. Shafto, Daisy L. Shawyer, B.A., F. M. Sinclair, D. R. Bedell Sivright, A. N. Smith, K. F. Sonntag, G. H. Stevenson, J. Stevenson, J. Taylor, B. C. Tennent, H. C. Todd, J. J. Tough, C. B. Tudehope, R. C. Wallace, S. H. Wilkinson, G. A. Wyon, B.Sc.

*With distinction.

UNIVERSITY OF ABERDEEN.

GRADUATION CEREMONY.

THE graduation ceremony which marks the close of the winter session took place in the Mitchell Hall, Marischal College, on March 31st. Greater interest attaches to the spring graduation than to the summer, not only on account of the larger number of graduates but also on account of the distinguished group of honorary graduands which the occasion brings together. The presence, too, of the new Principal of the University, Dr. George Adam Smith, added an unusual feature to the proceedings. The Principal had a most enthusiastic reception from the crowded audience, which taxed the capacity of the hall to its utmost, and the ceremony passed off very successfully to the usual accompaniment of undergraduate manifestations of high spirits, which, however, were kept within reasonable bounds.

Among those presented for the honorary degree of LL.D. were Dr. James Mackenzie, London, Dr. Niven, M.O.H., Manchester, and Professor Ogston, Aberdeen.

In presenting Dr. James Mackenzie, the Dean of the Law Faculty said he afforded an outstanding example of brilliant work in medical science, carried out by a man engaged in active medical practice. His investigations of diseases of the circulatory and nervous systems, conducted amid the labours and anxieties of everyday professional duties at Burnley in Lancashire, were remarkable alike for their originality and their fruitfulness. In the recent annals of medicine there had been few more striking instances of the successful application of scientific methods to the elucidation of clinical conditions. The results of his observations were set forth in his treatises on *Diseases of the Heart*, *The Study of the Pulse*, and other kindred topics, as well as in numerous contributions to scientific journals. His researches, the importance of which was quickly recognized, had won for him an acknowledged place in the front rank of the profession. The University of Aberdeen cordially welcomed Dr. Mackenzie, and in token of her appreciation of his distinguished and beneficent work desired to enrol him amongst her honorary graduates in law.

In presenting Dr. Niven, the Dean said that Dr. Niven was a member of an Aberdeen family whose exceptional distinction as students in Aberdeen University and at Cambridge, and subsequent eminence in various departments of science, were widely known. Forty years ago he graduated in Arts at Aberdeen, with honours in mathematics. Later, at Cambridge, he held a high place in the list of Wranglers, and was a Fellow of Queen's College. After taking his degree in Medicine at Cambridge, he devoted himself to the special study of the all-important subject of public health. As Medical Officer of Health of Oldham, and afterwards of Manchester, he had performed his administrative duties with conspicuous zeal and efficiency, and had achieved notable success in improving the sanitary condition of these great communities. His investigations of various public health problems, such as the etiology and prevention of pulmonary phthisis, were characterized by thoroughness and accuracy, as well as by openness of mind and sanity of judgement. It would be difficult to name any medical officer of health in this country who occupies a higher place than Dr. Niven in the estimation of hygienists.

In presenting Professor Ogston, the Dean said it was with pleasure and pride that they welcomed him to that hall for the purpose of conferring on him a mark of their admiration and regard. In 1882 their late colleague—for so he must call him—received his commission as Professor of surgery, and for twenty-seven years he had served the university with steadfast devotion. During those years he had not only proved himself an eminently inspiring teacher, but had also built up a world-wide reputation as a surgeon and scientific worker. By common consent he was recognized as one of the most skilful operating surgeons of his time, and it would not be easy to mention any other Scottish surgeon of the past thirty years whose scientific researches had yielded results more valuable in the advancement of surgery. In the Soudan campaign of 1888, and again in the South African war, 1899-1900, his skill and experience had been freely devoted to ministering to the needs of his countrymen in the field. In the name of his former colleagues he asked the Vice-Chancellor to confer upon Professor Ogston the degree of Doctor of Laws in token of their warm appreciation of his manifold and signal services to their university, to science, and to humanity.

The following degrees were also conferred:

D.Sc.—J. C. G. Ledingham, M.A., M.B. (of The Lister Institute, London. Thesis, A Series of Researches on Certain Processes of Immunity).

M.D.—A. A. Bisset (of Sheffield. Thesis, Syphilis); A. Deane (of London, W. Thesis, Clinical Observations on Arterial Blood Pressure); F. Hernaman-Johnson (of Bishop Auckland. Thesis, Lower Motor Neuron Palsy of Childhood); J. W. Littlejohn (of Ellon. Thesis, Von Pirquet's Cutaneous Diagnosis of Tuberculosis).

CH.M.—R. W. A. Salmond (of the Great Northern Central Hospital, London, N. Thesis, The Absorption of a Few of the Chemically Prepared Varieties of Catgut, especially Iodized, used in Surgery).

M.B., CH.B.—†W. J. Reid, M.A., B.Sc.; *†R. Richards, M.A.; †C. F. Simpson, M.A. H. Braysbaw; A. J. W. Calder, M.A.; N. J. Calder, M.A.; J. P. Cameron; R. M. Chance; C. Clyne; E. W. H. Cruickshank; C. E. Greeson; T. C. Halley; R. Kellas; C. McKerrow; A. Mitchell; A. D Reid; H. E. Shortt; R. Sinclair; W. Smith; D. J. S. Stephen; A. U. Webster, M.A.; ‡S. G. Trail.

D.P.H.—C. D. S. Agassiz; J. C. Bell; E. Bisset, Captain, I.M.S; D. Murray; P. Nicol; A. C. Profeit.

* Passed Final Professional Examination with "Much Distinction."
† Second Class Honours.
‡ M.B., C.M., under Old Regulations.

University Prizes in the Faculty of Medicine.

Fife Jamieson Memorial Gold Medal in Anatomy.—Richard R. M. Porter, M.A., Aberdeen.

Sizars Gold Medal in Anatomy.—Richard R. M Porter, M A.

Keith Gold Medal for Systematic and Clinical Surgery.—Colin F. Simpson, M.A., Fraserburgh.

Shepherd Memorial Gold Medal for Systematic and Practical Surgery.—Robert Richards, M.A., Aberdeen.

Dr. James Anderson Gold Medal and Prize in Clinical Medicine.—Robert Richards, M.A.

Matthews Duncan Gold Medal in Obstetrics.—Colin F. Simpson, M.A., Fraserburgh.

UNIVERSITY OF DUBLIN.

THE following candidates have been approved at the examination indicated:

PRELIMINARY SCIENTIFIC (*Physics and Chemistry*).—D. H. Hall, W. E. Tyndall, G. Buchanan, F. Harris, E. J. Malherbe, A. Brady, W. F. Gibson, J. C. A. M'Calden, R. J. B. Madden, R. S. G. Halpin, W. R. L. Waters, F. C. Fleming, G. A. Bridge, F. A. Roddy, C. G. Sherowitz, T. E. B. Beatty, F. S. Gillespie, C. O'Reilly, W. A. Ryan.

PRELIMINARY SCIENTIFIC (*Botany and Zoology*).—D. S. Martin, W. C. L. Shee, T. J. Kelly, W. L. Bates, R. C. Chapman, C. P. Kelly, E. D. Kinsey, W. A. Ryan, F. P. Mitchell, C. D. M. Buckley, E. Boyers, E. Robinson, R. J. B. Madden, W. Hunt, C. G. Sherowitz.

INTERMEDIATE (*Part I*).—F. Breen, J. A. Maxwell, K. K. Drury, R. Johnson, Rev. T. Brook, R. E. Tottenham, C. W. C. Myles, E. Ll. Nash, B. D. Crichton.

INTERMEDIATE (*Part II*).—*Eileen Hewitt, *J. N. Armstrong, *J. Colgan, *Georgina Revington, *J. H. Powell, *W. P. Croker, *H. G. Trayer, *H. Bates, Dorothy K. Milne, J. H. Counihan, W. O. W. Ball, R. A. Flood, W. E. Featherstonhaugh, J. H. Grove-White, F. B. M'Carter, A. P. Draper, O. V. Burrows, R. H. Lyons, K. K. Drury, C. W. C. Myers, J. Florence Colquhoun, J. N. G. Nolan, R. E. Dunn, E. Evans, E. F. O'Connor, Rev. T. Brook, J. A. Maxwell, B. G. Quinlan, R. Grandy, F. V. Agnew, Marjory Chapman.

FINAL (*Part I*).—J. M Elliott, T. A. Watson, F. Crosbie, J Gardiner, W. O. Halpin, R. E. Dunn, M. M'Knight, J. Beckett, O. C. S. Tandy, T. M. Crawford, T. W. E. Henry.

FINAL (*Part II, Midwifery*).—*W. L. Englisb, *A. Stokes, H. de L. Crawford, R. H. Mathews, C. W. M'Kenny, S. R. Richardson, A. A. Louw, H. Fleming, C. M. Finny, Mary G. Caskey, L. Trichard, V. M. Fisher, R. E. Lee, J. G. Ronaldson, V. G. Best, W. M. Johnstone, W. E. Adam, C. D. Hanan, C. Grene.

* Passed on high marks.

APOTHECARIES' HALL OF IRELAND.

THE Board of the Apothecaries' Hall, Ireland, has received the following reply from the Privy Council to the petition of the Hall asking the Council to direct under Sec. 19 Medical Act of 1886 the General Medical Council to re-schedule the Hall's Preliminary Examination in General Education:

[Copy]

March 22nd, 1910.

Sir,—Referring to your letter of the 10th December last, enclosing a Petition of the Apothecaries' Hall of Ireland praying that the General Medical Council might be directed to re-schedule the Preliminary Examination of the Hall as sufficient for registration in the Medical Students' Register, I am desired by the Lords of the Council to draw the attention of the Governing Body of the Apothecaries' Hall to the fact that the power of the Privy Council, under Section 19 of the Medical Act, 1886, to notify their opinion to the General Medical Council is limited (apart from the specific cases mentioned in the opening part of the Section) to cases in which the Council fails "to exercise any power or perform any duty or do any act . . . imposed on or authorized to be done by the General Council under the Medical Acts," and that, inasmuch as neither the establishment of a Register of Medical Students, nor the recognition of particular examinations in general education as qualifying medical students for registration therein is an "act or thing vested in or imposed on or authorized to be done by the General Council under the Medical Acts," the subject matter of the Petition does not fall within the purview of His Majesty's Privy Council.

I am accordingly directed by their Lordships to inform you that they are unable to comply with the prayer of the Petition.

I am, Sir,
Your obedient servant,
ALMERIC FITZROY.

The Secretary,
Apothecaries' Hall of Ireland,
Mary Street, Dublin.

THE new post of Secretary of the Board of Education for the Science Museum, Geological Museum, and Geological Survey, has been created, and Mr. F. G. Ogilvie, C.B., is its first incumbent. Mr. E. K. Chambers has succeeded Mr. Ogilvie as Principal Assistant Secretary of the Technological Branch, and Dr. H. F. Heath has been appointed Principal Assistant Secretary of the Universities Branch of the Board in combination with his present post.

The Services.

EXAMINATION FOR PROMOTION.

Stations Abroad (India).

THE following is the result of the Examination for Promotion of officers of the Royal Army Medical Corps and the Indian Medical Service in Technical Subjects:

ROYAL ARMY MEDICAL CORPS.

Major N. FAICHNIE, M.B., Army Medical Organization in Peace and War. Already passed in (*d*) ii, Sanitation and Epidemiology, and in Medical History, etc.

Majors E. C. ANDERSON, D.S.O., and A. G. THOMPSON, M.B., (*d*) ii. Have yet to pass in Technical Subjects.

Major T. H. J. C. GOODWIN, D.S.O., Technical Subjects. Already passed in (*d*) ii.

Captain J. FAIRBAIRN, M.B., (*d*) ii. Has yet to pass in (*h*).

Captain T. T. H. ROBINSON, M.B., (*h*) ii. Already passed in (*b*), in (*d*) ii, and (*h*) iii.

Lieutenants E. B. LATHBURY, E. D. CADDELL, M.B., and W. W. BOYCE, (*h*) iii. Already passed in (*b*), in (*d*) ii, and (*h*) ii.

Lieutenant O. C. P. COOKE, (*h*) ii and iii; .8. Has yet to pass in (*d*) ii. Already passed in (*b*).

Lieutenant C. W. BOWLE, (*d*) ii and in (*h*) ii and iii. Already passed in (*b*).

Lieutenant E. J. KAVANAGH, M.B., (*d*) ii and in (*h*) ii and iii; .8 in (*h*) ii and iii. Already passed in (*b*).

Lieutenants A. H. JACOB, J. L. WOOD, and F. T. TURNER, (*d*) ii and in (*h*) ii and iii. Have already passed in (*b*).

Lieutenant J. E. M. BOYD, (*h*) ii. Already passed in (*d*) ii and (*h*) iii. Has yet to pass in (*b*).

Lieutenant O. R. MCEWEN, (*d*) ii and in (*h*) ii and iii; .8 in (*h*) ii and iii. Has yet to pass in (*b*).

Lieutenant J. DU P. LANGRISHE, M.B., (*h*) iii. Already passed in (*d*) ii and (*h*) ii. Has yet to pass in (*b*).

Lieutenant C. F. RUDKIN, (*d*) ii and in (*h*) ii and iii; .8 in (*h*) ii and iii. Has yet to pass in (*b*).

Lieutenant W. B. PURDON, M.B., (*d*) ii and in (*h*) ii and iii; .75 in (*d*) ii. Has yet to pass in (*b*).

Lieutenant F. CASEMENT, M.B., (*h*) ii. Already passed in (*d*) ii and (*h*) iii. Has yet to pass in (*b*).

Lieutenant H. W. FAREBROTHER, (*d*) ii. Has yet to pass in (*h*) i, ii, and iii. Already passed in (*b*).

Lieutenant A. G. WELLS, (*d*) ii and in (*h*) ii and iii. Already passed in (*b*).

INDIAN MEDICAL SERVICE.

Captain P. S. MILLS, M.B., (*d*) ii. Already passed in (*h*) ii and iii.

Captain J. F. JAMES, M.B., (*h*) ii and iii. Has yet to pass in (*d*) ii.

Lieutenant N. N. C. G. MCVEAN, M.B., (*h*) ii. Already passed in (*d*) ii and (*h*) iii.

Lieutenant N. S. SIMPSON, (*d*) ii. Already passed in (*h*) ii and iii.

Lieutenant R. F. HEBBERT, (*h*) ii. Already passed in (*d*) ii and (*h*) iii.

Lieutenant J. SMALLEY, M.B., (*d*) ii and in (*h*) ii and iii.

Lieutenant W. M. THOMSON, M.B., (*d*) ii and in (*h*) ii and iii; .75 in (*d*) ii.

Lieutenant A. P. G. LORIMER, M.B., (*h*) ii. Has yet to pass in (*d*) ii. Already passed in (*h*) iii.

Lieutenant F. H. SALISBURY, M.B., (*d*) ii. Already passed in (*h*) ii and iii.

Lieutenant F. C. FRASER, M.D., (*h*) ii and iii. Already passed in (*d*) ii.

Lieutenant H. H. THORBURN, M.B., (*d*) ii; .75. Already passed in (*h*) ii and iii.

Lieutenant O. A. R. BERKELEY-HILL, M.B., (*d*) ii and in (*h*) ii and iii.

Lieutenant W. P. G. WILLIAMS, M.B., (*d*) ii; .75. Already passed in (*h*) ii and iii.

Lieutenants S. B. MEHTA and A. H. NAPIER, M.B., (*d*) ii and in (*h*) ii and iii.

Lieutenant D L. GRAHAM, M.B., (*d*) ii and in (*h*) ii and iii; .8 in (*h*) ii and iii

Lieutenant E. B. MUNRO, M.B., (*h*) ii and iii. Has yet to pass in (*d*) ii.

Lieutenant P. K .TARAPORE, (*d*) ii and in (*h*) ii and iii.

Lieutenant R. B. NICHOLSON, (*h*) ii. Already passed in (*d*) ii and (*h*) iii.

Lieutenant J. A. CRUICKSHANK, (*d*) ii and in (*h*) ii and iii.

Lieutenant D. D. KAMAT, (*d*) ii and in (*h*) ii and iii; .8 in (*h*) ii and iii.

Lieutenants S. C. CHUCKERBUTTY and W. E. R. WILLIAMS, M.B., (*h*) ii and iii. Has yet to pass in (*d*) ii.

Lieutenants P. M. RENNIE, M.B., and A. N. DICKSON, M.B., (*d*) ii and in (*h*) ii and iii.

Lieutenant A. J. H. RUSSELL, M.B., (*h*) iii. Already passed in (*d*) ii and (*h*) ii.

Lieutenant R. E. WRIGHT, M.B., (*d*) ii and in (*h*) ii and iii.

Lieutenant D. H. RAI, M.B., (*h*) ii and iii; .8. Has yet to pass in (*d*) ii.

Lieutenants F. A. BARKER, M.B., and F. STEVENSON, M.B., (*d*) ii and in (*h*) ii and iii.

Lieutenant S. C. PAL, (*h*) ii and iii. Has yet to pass in (*d*) ii.

NOTE.—In accordance with Army Order 216 of 1909, Lieutenants of the Royal Army Medical Corps who have not

qualified in (*h*) ii and (*h*) iii by January 1st, 1910, will be required to take up the new Subhead (*h*) i in addition at any subsequent examination in Subject (*h*).

ROYAL ARMY MEDICAL CORPS (TERRITORIAL).

CAMBRIDGE UNIVERSITY OFFICERS' TRAINING CORPS.

Medical Unit.

SINCE the beginning of the academic year the medical unit of the Cambridge University Officers' Training Corps, under the command of Captain H. Buckley Roderick, and comprising a Section B of a field ambulance for purposes of training, has carried out a useful and instructive programme.

The Michaelmas term was occupied in preparing the senior cadets for the examinations which took place in the latter part of November for Certificates A and B, whilst the recruits were made acquainted with squad, company, and ambulance drill and the general duties of a medical officer in the field.

On the general field day of the corps in October the field exercises of the medical unit consisted in pitching a dressing station complete, with operating tent, field kitchens, incinerators, and latrines, and the dressing and conveyance of the wounded on stretchers from the firing line to the ambulance wagons and thence to the dressing station.

During the Lent term a series of lectures were given on nursing, the organization of medical units in the field, the conveyance of wounded from the firing line to the base, and the ordinary courses of drills were held. On February 21st the medical unit again took part in the general field day of the corps. The scheme of operations supposed that the Great Eastern Railway from Ely through Cambridge to Saffron Walden was the frontier between two States called Eastland and Westland, which had declared war on February 16th and were mobilizing their troops as fast as they could. The town of Cambridge was represented in the scheme as a small frontier village. The firing line extended over a distance of five miles, and the work of the unit consisted in making all arrangements for the care and removal of the wounded that would have resulted had such a fight been actually in progress. A very low estimate of 10 per cent. was taken for the sake of convenience, involving the working out in skeleton form of all details of the work of a complete field ambulance. Major Begbie, R.A.M.C., officiated as umpire. Captain Roderick, who was in command, sent one section to Fen Ditton under Mr. Alcock, who reported 100 casualties, including 20 killed and 4 too badly wounded to be moved. For these temporary shelters were provided, and a dressing station was established at the Plough Inn. Arrangements were made for the removal of 76 wounded to Lord's Bridge, which was the "railhead," the railway on the Cambridge side of it being supposed to have been destroyed. Mr. Alcock utilized the River Cam for the removal of the more seriously wounded as far as Cambridge, commandeering the *Red Grind* and other ferry boats for the purpose, and made arrangements by telephone for their conveyance from Cambridge to Lord's Bridge in ambulance wagons and motor cars. Another section under Mr. Ballingall established a dressing station at the Caius College Farm where he had 76 wounded to deal with, for the transport of these to Lord's Bridge he arranged for the collection of carts and wagons from the neighbouring farms and conveyed them via Trumpington and Grantchester. Mr. Humphrey was in command of the third second and pitched his dressing station at Trinity Farm, making similar arrangements for the removal of 171 wounded. Mr. Bramwell was in charge of the "railhead" at Lord's Bridge. He had the difficult task of providing for the removal to Bedford, the nearest stationary hospital, of 323 wounded, 51 of whom had to be conveyed lying down. There was an ambulance wagon at his disposal in which he dispatched 46 of the more seriously wounded, the remainder being sent in ordinary passenger trains.

So well did the scheme work out that it would have been possible to have dispatched all the wounded by 6 p.m. to reach Bedford at 6.40. Provision was also made for the feeding of the wounded at Lord's Bridge where a clearing hospital was established.

In June the unit completes the work of the academic year with the annual camp at Aldershot.

Second Home Counties Field Ambulance.

This unit celebrated its second birthday by a conversazione at St. George's Hall, Canterbury, on Easter Monday. Major A. R. Henchley, the officer commanding, in a speech during the evening referred to the officers' training corps, consisting of a senior division recruited at the universities, and a junior division from among the principal public schools, and said that in Canterbury there was the King's School contingent under Captain C. W. Bell, and another at St. Edmund's; the corps supplied, he said, a want long felt in filling up vacancies in the army auxiliary forces. He referred to the admirable results of recruiting during the past year, when 72,000 men had joined the Territorial Force, which had now reached a total of nearly 300,000 officers and men; it had, in fact, nearly 90 per cent. of the establishment required, and 86 per cent. of the officers required. He criticized the objects of the various leagues which had come into existence for the promotion of compulsory training, believing that the response made to Mr. Haldane's admirable Territorial scheme showed that it was along those lines that the needs of the country could best be met with the least dislocation of trade and commerce. The 2nd Home Counties Field Ambulance, he said, had an establishment of 220, but actually numbered 250, the odd 30 belonging to the Territorial Force Reserve.

Public Health AND POOR LAW MEDICAL SERVICES.

PADDED ROOMS AT WORKHOUSES.

THE following circular has been issued to boards of guardians by the Local Government Board for England and Wales:

RECORDS OF DETENTION IN PADDED ROOMS AT WORKHOUSES.

Sir,—I am directed by the Local Government Board to state that their attention has recently been drawn to the need of some record of cases where inmates of workhouses are detained in the padded rooms at those institutions.

The Board have been in communication on the subject with the Commissioners in Lunacy, who state that they agree with the Board that it is highly desirable that a careful record should be kept of such cases.

The Commissioners are of opinion that the records should be kept either in a separate book to be provided for the purpose, or in the Register of Mechanical Restraint. In the latter case the entries should be made in a part of the Register separate from that used for entries of mechanical restraint.

The Board will be glad if, in those unions where there is a padded room at the workhouse, the guardians will give directions for the necessary record to be kept of every case of detention in the padded room. The record should show the date and duration of the detention, the reasons for the treatment, and what directions were given by the medical officer in the matter. Any such entries should be brought to the notice of the Commissioner in Lunacy on the occasion of his next visit to the workhouse.

The Board may add that the Commissioners consider that in no case should a person be detained in a padded room at the workhouse except under the previous order or with the concurrence or approval of the medical officer.

I am, Sir,
Your obedient Servant,
H. C. MONRO,
Secretary.

March 31st, 1910.

Medico-Legal.

WORKMEN'S COMPENSATION CASES.

Refusal to do Light Work.

IN a case at Burslem it appeared that the applicant, who was a collier, lost his eye as the result of an accident. His average earnings were £2 2s. 3d., and he was paid £1 a week until the employers offered him light work as a watchman and messenger. This work he declined, as he was "frightened of losing the other eye." In consequence of this refusal, the employers refused to pay further compensation, and the man made an application to the court. The judge held that he was competent to do light work, and that he should have taken the offer of it when he had the chance; the man was merely trying to put the screw on the employers to make them pay him a lump sum. The compensation was reduced to 10s. a week.

The Duties of a Medical Referee.

In a case in the Court of Appeal (February 11th) the applicant was a miner who alleged that he was suffering from nystagmus, an affection of the eyes, which was an industrial disease to which the Act applied, and the certifying surgeon so certified. The matter was referred at the instance of the employers to a medical referee under Section 8 (I) of the Act. By Clause 16 of the Regulations as to Medical Referees made by the Secretary of State on June 21st, 1907, the medical referee was required to give his certificate in the form prescribed in the schedule, and by that form (15) the medical referee was authorized only to allow or dismiss the appeal against the certifying surgeon's certificate. The certificate of the medical referee did not comply with this form, and did not state in terms whether or not the workman was suffering from the disease in question at the time when the certifying surgeon gave his certificate. The county court judge made an award in favour of the workman. On appeal a settle-

ment was arrived at, but the Master of the Rolls said that he thought it right to call attention to the extreme difficulty of applying Form 15 in the Schedule to the Regulations as to Medical Referees to a case where the industrial disease was of an intermittent character, because according to that form the medical referee was only authorized either to dismiss or allow the appeal. It was almost impossible for the medical referee to say in cases of that kind what was the condition of the man at any particular antecedent date. Possibly the authorities whose business it was to make regulations under the Act would consider the question.

Neurasthenia and Hydrocele.

In a case heard at the Truro County Court recently, the applicant had suffered the loss of an eye owing to an accident, and also suffered from hydrocele, and the theory was set up that the accident and the anxiety resulting from it had produced traumatic neurasthenia, that this had caused disturbance of the vasomotor functions, and this, again, had led to the hydrocele. Medical evidence was called in support of this view. Medical witnesses called for the respondent company, while stating that they had never heard of hydrocele arising from an injury to the eye, admitted in cross-examination that the cause of hydrocele was not known, and that it was impossible to deny that it might be indirectly due to neurasthenia. The judge declined to enter into the point, though he observed that, judging from the cases he had already had, there seemed to be no end to neurasthenia; he awarded the compensation at 9s. 9d. a week, as the medical evidence showed that the man was not in a condition to go back to any except light work, which had not been offered him.

Duty to Use Surgical Appliances.

In Donnachie *v.* United Collieries, Limited, heard in the Court of Session, February 10th, it appeared that a brusher employed in a colliery had his right knee injured on October 16th, 1908. He received compensation at the rate of 15s. weekly; at first it was reduced to 5s. 9d. a week, and all payment was stopped on April 9th, 1909, on the ground that he had entirely recovered. On that date he applied for an award of compensation at the rate of £1 a week. The Sheriff-Substitute found that if the appellant did not wear a bandage the loosening of the knee cartilage was likely to recur, and that if he wore a knee-cap he would be able and ought to resume work as a brusher. In the circumstances the Sheriff-Substitute ended the compensation as from August 13th, and ordained the respondents to pay compensation at the rate of 5s. 9d. weekly from April 9th till August 13th. This decision was affirmed on appeal.

The Definition of an Accident.

MR. H. NORMAN BARNETT, F.R.C.S. (Belfast), writes with reference to the case of Hughes *v.* Glover, Clayton and Co., Limited (BRITISH MEDICAL JOURNAL, March 26th, p. 787): It draws attention to the examination of workmen previous to their engagement, the necessity of which I emphasized in my book, *Accidental Injuries to Workmen*. The matter is perhaps not of serious import to the wealthy insurance companies, but the case is altogether different when the "workman" is perhaps the servant, constant or at stated intervals, of a poor man who, from oversight, ignorance, or to save the money badly needed for himself, has not insured. To such an one an adverse judgement would be disastrous, and he should certainly be protected from the injustice of having the death of a seriously diseased man or woman laid on his shoulders as an "accident." The decisions are made by lawyers, many of whom, however eminent they may be, seem incapable of forming the opinion which the medical mind would, or to come to the conclusion to which, as Lord Atkinson stated, "I think any reasonable man could come," that in the case referred to the bursting of an advanced aortic aneurysm, or any such like happening, was not an accident, nor ever intended to be regarded as such by the framers of the Act.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

BREAKING ONE'S WORD.

CYMRO.—To accept an appointment at a hospital and then refuse to take it up might be justifiable in certain circumstances. Though an action might be brought for breach of contract, this is not likely to be done.

COLLIERY STOPPAGES.

MELFORT.—We are informed that it is usual for employers to retain about 5 per cent. of the deductions for the doctor from the workmen's wages for the purpose of covering the clerical expenses involved. With regard to the second practice which our correspondent believes to exist, it is extremely objectionable and very probably illegal. It would be advisable for the medical men to meet together to discuss the question, and, if no agreement can be arrived at, the matter should be immediately brought before the Executive Committee of the Division.

Obituary.

WALTER BUTLER CHEADLE, M.A., M.D.CANTAB., F.R.C.P.LOND., F.R.G.S.,

CONSULTING PHYSICIAN TO ST. MARY'S HOSPITAL AND THE HOSPITAL FOR SICK CHILDREN, LONDON.

By the death of Dr. Cheadle our profession has lost a physician of much eminence and a man of commanding personality and great worth. Dr. Cheadle held an almost unique position in the affections of the students of St. Mary's Hospital, for he possessed those attributes which are so greatly appreciated by young men—absolute straightforwardness, high abilities, and a history of athletic prowess. His famous journey across "the Rockies" added to the charm that surrounded him. A striking proof of that affection was given on his last appearance as chairman at the hospital dinner, when the unbounded applause that greeted him expressed the desire that this modest and retiring man must be for once publicly acclaimed with the utmost warmth. A still greater proof was manifested in the concern and regret with which the first news of the illness that proved eventually fatal was received by friends in his own profession and by his patients.

A Yorkshireman by birth, he was the son of the Rev. James Cheadle, Vicar of Bingley. He was born in 1836, and was educated at Bingley Grammar School, and later went to Cambridge, where he was a scholar of Gonville and Caius College. Had it not been for a family bereavement he would have rowed in the boat in 1859, a year in which a particularly heavy crew chose to row in a particularly light boat. Dr. Cheadle, who was a big man, of powerful build, has said that had he rowed that year the boat which was eventually used would not have been chosen, and then in all probability the history of these races would have been deprived of the dramatic episode in 1859, when the Cambridge crew capsized. From Cambridge he went to St. George's Hospital. He took the degree of M.B. in 1861, and in June, 1862, started with Viscount Milton upon the exploration of the then little known western parts of Canada. Upon their return in the next year they published a most fascinating account of their adventures and dangers. This book, *The North-West Passage by Land*, lives in the memory of many who read it as boys, for it was one of the most entertaining books of adventure and travel ever written. It speedily ran through eight editions. A new edition published in 1901 is the more interesting because it contains a postscript written by Dr. Cheadle touching upon the fate of some of the prominent characters of the expedition, and pointing out the realization of many of the forecasts that the explorers had made in 1862. Few adults, and we hope no boys, could fail to be interested even now in the intrepid guide, the Assiniboine, the ludicrous Mr. O'B., and the graphic account of gradual starvation when the trail was lost. Dr. Cheadle was one of the oldest Fellows of the Royal Geographical Society, for he was elected nearly fifty years ago.

Although it is exceptional for one who has tasted the joys of exploration to settle down, Dr. Cheadle proved an exception, and on his return took the degree of M.D. in 1865, and in 1866, upon the retirement of Sir James Alderson, he was elected Assistant Physician to St. Mary's Hospital. At the time of his death he was Senior Consulting Physician to the hospital, and his active service extended over nearly forty years. In 1869 he was appointed Dean, and in the same year he became Assistant Physician to the Hospital for Sick Children, Great Ormond Street. His record of active service at the Children's Hospital extended over twenty-three years, and there he obtained a world-wide reputation for his work in this branch of medicine.

Dr. Cheadle had a high sense of duty to the institutions with which he was connected. The example of his regard for his patients was one of the greatest benefits he conferred upon his students, for they could not fail to appreciate that, however busy or worried he might be, the poor under his care were never neglected. He took an active part in founding scholarships at the medical school, fostered a spirit of *esprit de corps* by presenting to the library portraits of eminent teachers and students connected with the school, and generously supported the

athletic clubs. In 1898 he endowed a Cheadle prize and medal in clinical medicine, to be awarded to students at St. Mary's Hospital.

Another interesting feature in Dr. Cheadle's career was his early support of the claims of medical women. He was one of the first lecturers at the London School of Medicine for Women, and used to describe with the quiet humour he possessed the wrath and indignation that this evoked at St. Mary's Hospital among some of his colleagues. Dr. Cheadle took much practical interest also in the training and education of nurses, and gave a series of lectures on hygiene to the Nursing Institute in Bloomsbury Square.

When we realize the immense clinical experience he possessed, and associate with it great insight, a fine judgement, and a broad humanity, we are prepared to find that his writings were intensely practical. His style was terse and forcible, and he made his points abundantly clear to the reader. We should, however, do him little justice if we only claimed these qualities for his medical writings. His pioneer work in 1877 on infantile scurvy, and his lectures and articles on rheumatism in childhood stand out as brilliant achievements in English medicine. Among other of his well-known writings was his book upon *The Artificial Feeding of Infants*, his Lumleian Lectures in 1900 on Some Cirrhoses of the Liver, and his occasional lectures on medicine must be mentioned.

Thirty years a Fellow of the Royal College of Physicians, he was Examiner from 1885 to 1888, Councillor and Censor in 1892–1893, and 1898, Lumleian Lecturer in 1900.

As a teacher he excelled in demonstrations of the practical management of disease. His was not that type of mind which weighed laboriously the *pros* and *cons* in the diagnosis of a case, but from his ample experience he almost intuitively arrived at the probable explanation of the illness. He always aimed at the attainment of some practical line of conduct, touching simultaneously on the weak points in the chain of evidence if such existed. His pupils learnt from him two very valuable rules of treatment—to acquire the proper use of some of the most reliable drugs, and, if the way was not plain, to be cautious not to do harm by rash measures. Mature experience had taught him the reality of Nature's curative powers, and the value of time as a healer. Yet to the end of his career he avoided the dangers of a rigid conservatism, and this could hardly fail to be the case, for he was a true clinician and ever alive to the complexity of medical problems. Dr. Cheadle was greatly beloved by his patients, both rich and poor, and with children he was particularly charming. For many years he had a large consulting practice, and perhaps he was a little disappointed to find that the public looked upon him so often as a children's specialist. In social life as in professional life he was dignified, courteous, and reserved, but deeply affectionate. Many heavy sorrows fell upon him, and the loss of his second wife after a protracted illness was a crushing blow from which he never really recovered.

When in America he had contracted dysentery, which for many years after gave him from time to time considerable trouble. Early in 1909 signs of obstruction developed, necessitating an operation for its relief. For fifteen months he struggled against increasing illness with wonderful courage and patience, but at the beginning of March he was unable to leave his bed, and passed away on Good Friday.

Dr. Cheadle was twice married, first to Anne, second daughter of Mr. W. Murgatroyd, of Bingley. Secondly, to Miss Emily Mansel Mansel, daughter of Mr. Robert Mansel, of Rothbury. He leaves four sons by his first wife to mourn his loss.

The funeral took place at Eastbourne on March 30th.

THOMAS WHITEHEAD REID, M.D. ST. ANDREWS, F.R.C.P.EDIN.,

SENIOR SURGEON TO THE CANTERBURY HOSPITAL.

WE regret to have to announce the death of Dr. Whitehead Reid, Chairman of the Hospitals Committee of the British Medical Association, which took place on March 31st at his residence in Canterbury. Dr. Reid, who was in his 61st year, suffered from a severe attack of influenza at Christmas; after recovering to some extent, he experienced a relapse in February, from which he never entirely recovered.

Thomas Whitehead Reid was the son of Dr. James Reid of Canterbury, who still resides there, though he has long retired from practice. He was educated at the King's School, Canterbury, and St. Bartholomew's Hospital; he obtained the diplomas of L.R.C.P.Lond., M.R.C.S.England in 1874; he became a Fellow of the Royal College of Physicians of Edinburgh in 1881, and took the degree of M.D. St. Andrews in 1896. After holding the offices of Ophthalmic House-Surgeon and Registrar to St. Bartholomew's Hospital, he was for some time private physician to the late Baron Rothschild; he was with the Baron at the time when the negotiations concerning the Suez Canal were in progress, and he had some share in dispatching the telegram which bought for Great Britain the shares still held by this country in the Suez Canal Company.

Dr. Reid joined his father in practice at Canterbury over thirty years ago, and eventually succeeded him. He was appointed Honorary Surgeon to the Kent and Canterbury Hospital, and at the time of his death was Senior Surgeon to that institution, in the welfare of which he always took great interest. He was also Surgical Lecturer to St. Augustine's Missionary College, and Lecturer on Surgical Nursing to the Kent and Canterbury Institution for Trained Nurses; he was Medical Officer to King's School, and an Examining Lecturer and honorary member of the St. John Ambulance Association; he was also an Honorary Associate of the Grand Priory of the Order of St. John of Jerusalem in England. He contributed to the Report of the Commission of the Royal Medico-Chirurgical Society on Membranous Laryngitis in 1879, and published papers on surgical subjects in the *St. Bartholomew's Hospital Reports*, the *Lancet*, and the BRITISH MEDICAL JOURNAL. He was a member of the council of the Medical Officers of Schools Association, and wrote a paper on school food.

Dr. Reid took a great interest in the British Medical Association, which he joined very early in his career. He had been a member of the Council of the South-Eastern Branch, and held the office of President of that Branch about six years ago. He was elected a Representative of the Branch on the Central Council of the Association last year, and not long ago succeeded Dr. Pope as Chairman of the Hospitals Committee. Unfortunately the early breakdown of his health prevented him from rendering in that capacity the services which he was anxious and very competent to give. He was a man who was always ready to devote time and labour to the service of the profession, and one of his last public acts was to attend a meeting of the Hospitals Committee at a time when he had only partially recovered from the attack of influenza which was eventually to prove fatal.

Dr. Reid married in 1880 the daughter of Colonel Munns of the 74th Highlanders, and leaves two sons, the elder of whom has entered the medical profession, and one daughter. The funeral took place on April 2nd, at St. Martin's Church, Canterbury.

One who was intimately associated with him in the local work of the Association writes that Dr. Reid will be very much missed by the Division. He was a most regular attendant at its meetings, and when he was the President of the South-Eastern Branch gave a most delightful reception, as well as a very instructive address, full of points of local interest, with a vein of quiet humour running through it. On the Branch Council he will also be sadly missed, as his opinion was looked upon as a deciding one. As a brother practitioner he was almost the ideal man, straightforward and considerate—in a word, he was a man who by his character and attainments won the respect and regard of a wide circle of friends and colleagues.

One of Dr. Reid's colleagues on the Central Hospitals Committee writes as follows:

Every member of the Central Hospitals Committee will have received with deep regret the official notice of their chairman's death. It is only a few months ago that the committee were congratulating themselves on having secured the services of so competent a chairman, and were looking forward to receive much assistance in their work from his experience and judgement. Short as has been the tenure of his office, Dr. Whitehead Reid has had the

opportunity of rendering special service to the Association by the sympathetic tact which he invariably showed in his relations with his fellow members; whilst one cannot help fearing that his strong sense of duty in attending an evening meeting in London in his capacity as chairman when hardly convalescent from an attack of influenza may have had some effect in causing his fatal illness. But Whitehead Reid was always ready to sacrifice himself for the public interest. Until one knew him well one hardly recognised beneath his gentle and retiring disposition the keen enthusiasm which he possessed for all that might tend to improve the power and position of the profession. So long as our Association can secure such devoted servants as Dr. Whitehead Reid its future is assured.

FREDERIC VICTOR MILWARD, M.B., B.C.CANTAB., F.R.C.S.ENG.,

ASSISTANT SURGEON, THE GENERAL HOSPITAL, BIRMINGHAM.

WE greatly regret to announce the early death of Mr. Milward, which occurred at his residence in Rotton Park Road, Edgbaston, Birmingham, on March 31st. His death was due to pneumonia following an attack of influenza from which he had not properly recovered. He was only 40 years of age.

Frederic Victor Milward was the son of the late Colonel Victor Milward, M.P. for the Stratford Division of Warwickshire. He was a well-known surgeon in Birmingham, being Assistant Surgeon to the General Hospital and Honorary Surgeon to the Royal Orthopaedic and Spinal Hospital. He graduated B.A. of Cambridge in 1891, and went to St. Thomas's Hospital in the same year, taking the degrees of M.B., B.C. Cambridge in 1895, and passing the final F.R.C.S.Eng. in 1900. At St. Thomas's Hospital he was a brilliant student, and there held the posts of Clinical Assistant in the Ear and Skin Departments, and Demonstrator of Practical Surgery. He then went to Birmingham, where he held resident posts at the General Hospital, being House Surgeon and Resident Surgical Officer. He showed such great promise as a surgeon that in 1903 he was appointed Casualty Surgeon, and in 1908 Assistant Surgeon to the hospital. He also held the posts of Surgical Registrar and Junior Surgical Tutor. He was appointed Surgeon to Outpatients at the Children's Hospital in 1904, but resigned this post in 1908 to become Honorary Surgeon to the Orthopaedic Hospital.

Mr. Milward took great interest in the Royal Army Medical Corps, Territorial Force, being a Captain on the staff of the 1st Southern General Hospital. As Secretary of the Red Cross Society in Birmingham he was energetically engaged, down to the time of his death, in planning the site and making arrangements for the equipment of the 1st Southern General Hospital. He was also organizing the Voluntary Aid Detachments and actively employed in teaching them ambulance work.

Mr. Milward frequently read surgical papers, always very practical and full of interest, at the medical societies in Birmingham. He was the author of two excellent books, *Diseases of the Rectum*, 1906, and *Contributions to the Study of Rectal Diseases*, 1909; his review of 87 cases of tetanus in the *St. Thomas's Hospital Reports*, 1900, is, perhaps, his best-known paper. He also invented an inhaler for administering ether and chloroform.

The early death of Mr. Milward came as a great shock to the medical profession in Birmingham and the midland counties. He was a brilliant surgeon, and although a young man his opinion was greatly valued. He had many friends by whom he was highly esteemed and to whom he was greatly endeared, on account of his ever courteous manner and kindly disposition. His character was noble and his influence ennobling. His personality was such that those who had the pleasure to work with him felt that he was one of those men who could be confidently trusted to do what was right, and who most conscientiously performed the duties of his profession. By his death a career full of promise has been cut short. Of no one can it more truly be said than of Mr. Milward that he was—

> One who never turned his back, but marched breast forward;
> Never doubted clouds would break;
> Never dreamed, though Right were worsted, Wrong would triumph;
> Held we fall to rise, are baffled to fight better—
> Sleep to wake.

He married in 1907, Norah, daughter of Mr. B. B. Tilley, of Edgbaston, and leaves one little daughter. With Mrs. Milward great sympathy is felt in her loss.

The funeral took place at Harborne Church on April 4th, the service being performed by the Archdeacon of Birmingham and the Rev. W. G. Moss, Vicar of the Lickey. Besides a large assembly of relations and friends, there were present many medical men, including colleagues from the General Hospital and the Orthopaedic Hospital, many past and present residents of the General Hospital, members of the medical staffs of other Birmingham hospitals, and medical practitioners from near and far, who all came to pay their last tribute to his name.

J. E. H. S.

GEORGE CARPENTER, M.D.LOND.,

PHYSICIAN, QUEEN'S HOSPITAL FOR CHILDREN.

WE regret to record the death, on Easter Sunday, of Dr. George Carpenter, of Welbeck Street and the Queen's Hospital, Hackney, in the fifty-first year of his age. It took place suddenly, and was due to cerebral haemorrhage. He was the eldest son of the late Dr. William Carpenter, and received his general education at King's College School. His medical studies he pursued partly at St. Thomas's Hospital, partly at Guy's Hospital. He was Prosector at the Royal College of Surgeons, and in 1885 became M.R.C.S.Eng. and L.S.A. In the following year he graduated M.B. at the University of London. He received the M.D. degree four years later, and meantime had been admitted a Member of the Royal College of Physicians. On his becoming qualified, chance first led him in the direction of lunacy work, but after holding for a time an appointment at a large asylum in the provinces he returned to London and joined the Evelina Hospital as Resident Medical Officer. Thus began his connexion with the department of medicine to which his professional energies were afterwards almost entirely devoted. The Evelina Hospital he served in turn as Resident Medical Officer, Registrar, Chloroformist, and Physician, and at the time of his death was Physician to the Queen's Hospital, Hackney, an institution likewise occupied with the care of children. He also took considerable interest in ophthalmology. He was a frequent attendant at meetings of professional societies, among those to which he belonged and to whose publications he contributed being the Société de Pédiatrie at Paris, and the Société Française d'Ophtalmologie; while in the affairs of the Society for the Study of Disease in Children he played a specially active part, serving it as Honorary Secretary for several years, and later as Chairman of Council and editor of its reports. Of this society in its present guise—a section of the Royal Society of Medicine—he was President at the time of his death. In the course of his career Dr. Carpenter contributed largely to current literature; he was also author of several books, nearly all his writings relating more or less exclusively to his favourite branch of medicine. His earliest paper dealt with the incubation period of German measles, and his last notable publication—the Wightman Lecture of 1909—with congenital heart disease. He was, too, the founder, as also the editor, of the *British Journal of Children's Diseases*, and at one time took part in editing an Anglo-American journal named *Pediatrics*. Dr. Carpenter married some two years ago a daughter of Henry, Baron D'Este, and is survived by his wife.

THE attenuated ranks of Crimean veterans has suffered another loss in the person of Brigade Surgeon FERDINAND ODEVAINE, F.R.C.S.I., who died at Rathgar, co. Dublin, on March 20th, in his 73rd year. He entered the Bengal Medical Department as an Assistant Surgeon in 1859, becoming Brigade Surgeon in 1884, in which year he retired from the service. He took part in the Crimea campaign in 1855–6 with the Turkish contingent, and had received the Turkish medal.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. Candido Barato Ribeiro, professor of paediatrics in the Medical Faculty of Rio de Janeiro; Dr. Johannes Schiess Pacha, founder and for many years director of the Government Hospital of Alex-

andria, and since 1906 President of the Municipal Council of that city, aged 74; Dr. J. M. Mariani, of Madrid, for many years President of the Academia Medica-Quirurgica; Dr. S. Iglesias, sometime professor of therapeutics in the University of Madrid; and Dr. Wharton Sinkler, of Philadelphia, a former President of the American Neurological Association, and a prominent figure in American medicine, aged 65.

Medical News.

CAMBRIDGE medical men residing in the Manchester district who have not received notice of the formation of a Cambridge Medical Society, and of the dinner to be held on April 27th, are requested to communicate with the provisional secretary, Dr. E. B. Leech, 242, Oxford Road, Manchester.

THE Bethnal Green Board of Guardians includes four doctors—Dr. W. A. Farebrother, J.P., Dr. J. Knox, Dr. R. G. Styles (all old members), and Dr. G. Henderson, who has just been returned second on the poll for the East Ward.

THE annual general meeting of the Medical Defence Union will be held at the Royal Station Hotel, Hull, on Thursday, May 19th, at 5 p.m., when the annual report and audited balance sheet of accounts will be presented and the statutory resolutions brought forward.

A FURTHER series of demonstrations of museum specimens commences on Friday this week at the Royal College of Surgeons; the other dates at present fixed are April 15th, 18th, 22nd, 25th, and May 2nd, at 5 p.m. each day. The demonstrations to be given by Professor Keith deal with misplacements and malformations of the kidneys and genital organs; those by Professor Shattock with carcinoma, tuberculosis, and repair.

IN a paragraph which appeared in the JOURNAL of March 5th, p. 590, reference was made to the "Singing Doctors" who won such musical fame at Edinburgh in the middle part of the last century. The tradition is carried on at Gloucester, which rejoices in a vocal quartette composed of the mayor and mayoress and of the city high sheriff, Dr. Dykes Bower, and Mrs. Dykes Bower. Dr. Dykes Bower is a cousin of the late Dr. Dykes, well known as a composer of hymns. It was the sheriff who conceived the idea of the civic quartette. He was formerly house-surgeon at the Leeds General Infirmary and at one time organist at the Leeds Infirmary Chapel, at St. Bartholomew's Church, Armley, Leeds, and at All Saints' Church, Gloucester. Dr. and Mrs. Dykes Bower have often sung in recitals at Gloucester Cathedral, and the quartette has sung carols to the patients in the Royal Infirmary of that city.

MR. WALTER RUNCIMAN, President of the Board of Education, has appointed a Departmental Committee to consider and report upon various questions in regard to the present condition and the future development of the valuable collections comprised in the Board's Science Museum at South Kensington and Geological Museum in Jermyn Street. In particular the committee is asked to advise him (*a*) as to the precise educational and other purposes which the collections can best serve in the national interests; (*b*) as to the lines on which the collections should be arranged and developed, and possibly modified, so as more effectively to fulfil these purposes; and (*c*) as to the special characteristics which should be possessed by the new buildings which it is hoped will shortly be erected on the South Kensington site to house these collections, so as to enable them to be classified and exhibited in the manner most fitted to accomplish the purposes they are intended to fulfil. The committee is as follows: Sir Hugh Bell, Bart., D.C.L. (Chairman): J. J. Dobbie, F.R.S., LL.D.; Sir Archibald Geikie, K.C.B., F.R.S.; R. T. Glazebrook, D.Sc., F.R.S.; Andrew Laing, M.I.C.E.; the Hon. Sir Schomberg McDonnell, K.C.B., C.V.O.; Sir William Ramsay, K.C.B., F.R.S., LL.D.; Professor W. Ripper, D.Eng., M.I.C.E., Hon.M.I.Min.E.; Sir W. H. White, K.C.B., F.R.S., LL.D., with Mr. F. G. Ogilvie, C.B., one of the Secretaries of the Board of Education, as secretary.

THE first of a course of six lectures on the prevention of destitution, which will be given alternately by Mr. and Mrs. Sidney Webb, was delivered by Mr. Sidney Webb at St. James's Hall, London, on April 4th. Professor Gilbert Murray, who presided, said that a highly organized community must tend more and more to apply its knowledge to its needs, and though any step of the kind might be called by its opponents socialism, he looked upon it as a necessity for the advance of civilisation. Mr. Sidney Webb said that between two and three million people in the United Kingdom, nearly one-fifteenth of the population, were in a state of destitution, and that there were more people being maintained outside the Poor Law than by the Poor Law authorities as paupers. The crude socialist believed that in a socialistic state all would be well, but if by that was meant the Government ownership of the means of production, distribution, and exchange, the socialist state would not prevent the existence of destitution in the midst of the wealth. The second lecture—on public health administration as a means of reducing destitution—will be delivered by Mrs. Sidney Webb next Tuesday at the same place, at 8.30 p.m.

THE usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on March 18th, Dr. de Havilland-Hall in the chair. Of the long list of sickness claims submitted the majority were light and will probably not be of long duration, but in some cases the illnesses noted were serious, and lengthy periods of inability to work—perhaps permanent incapacity—may be expected. During the early months of this year several members on the list of chronic cases have died, and it seemed for a time as if some lessening of the number of those considered to be permanently incapacitated might be looked for; but many serious claims have been received since January 1st, and there now seems to be little reason to anticipate that the list of permanently incapacitated members will show any diminution at the close of the year. The society has now been at work for more than twenty-six years, and the average age of the members is steadily growing. This, of course, makes the claims more likely to be of a serious nature than when the average age was appreciably less. The rate at which this age is growing can easily be measured by the rapid increase in the numbers of those who each year reach age 65 and receive the bonus to which they are then entitled. Large reserves are necessary for the payment of the sickness allowance in chronic cases and of the bonus at age 65, and special sums are set apart for them at each valuation of the society's business. Prospectuses and all further information can be obtained on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, W.C.

THE Bread and Food Reform League has sent us a pamphlet on the Standardization of Bread which urges the need for a statutory standard, as various samples of flour examined for the Council of the League by Mr. C. G. Moor, M.A., F.I.C., have been found deficient in mineral matter. He obtained three samples of ordinary flour sold in Whitechapel, Bethnal Green, and Somers Town, which gave an average of only 36 grains per lb. as against 49 grains per lb., which is the League's standard. This deficiency of mineral matter is regarded as serious, especially for the children of the poor, in whose diet bread plays so large a part; more especially as the mineral matter in bread is present as phosphates and phosphorus is an important element in the building material of the body. While we do not wish to dispute the truth of these statements, and are entirely in favour of food being good and pure, we think it is easy to exaggerate the importance of small variations in the mineral constituents of flour. As bran contains a great deal of mineral matter, any addition of bran raises the percentage, and conversely, the whitest and most carefully refined flours are those in which this component is least abundant. We agree that it would be well for those classes whose staple diet is bread, and who cannot make up for the mineral deficiency by eating meat, milk, eggs, and other foods rich in phosphates, if they could be induced to prefer the coarser bread which food reformers advocate; but so long as coarse bread or black bread is associated with poverty it is idle to expect the hygienic argument to have much weight. Miss Loanes, in her book *Neighbours and Friends*, asserts that the bread eaten by the poor is generally new, that the crust is rarely eaten by the children, that a large part of that received as outdoor relief is wasted, and that people in dire poverty will not spend their money on such cheaper substitutes as oatmeal, in spite of the well-meant advice of district visitors and other mentors of the poor. Therefore it is hardly to be expected that Parliament, so tender of the prejudices of those who have votes, will pass any law to compel constituents to eat bread containing a larger proportion of the coarser elements of flour than they choose. In these circumstances, although its objects are sufficiently laudable, we do not feel warmly interested in the present proposals of the Bread Reform League.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

A. T. C. wishes to know the name of the surgeon who he believes has published reports of 35 cases of Dupuytren contraction treated by fibrolysin.

W. F. B. asks for advice in the treatment of a patient, otherwise in good health, who suffers from profuse sweating over an area as large as the hand on the front of the chest and between the shoulders; it is brought on by slight exertion, but sometimes occurs without exertion.

Puzzled seeks suggestions respecting attacks occurring during twelve years, at intervals of twenty-three to twenty-five days, in a man aged 45, who otherwise seems absolutely healthy in body and mind. They are characterized by profound lassitude, mental depression, and aching of the head and back, and muscular pains in the legs, neck, and scapulae. Exercise is impossible, owing to rapid onset of fatigue and exhaustion. Sometimes the tongue and fauces are slightly sore and inflamed, at others the heart's action is intermittent and irregular. In a general way, and except for their periodicity, and the absence of fever, the attacks resemble influenza; they commence and cease with equal suddenness, lasting four or five days. Balneology, change of air, and such drugs as have been tried have all proved useless.

ANSWERS.

Enquirer.—(1) A case of ringworm allowed to run its course without treatment must be a great rarity, and we cannot find mention of any instance in current literature. (2) Undoubtedly dentists recommend that disease of temporary teeth should be treated. The nature of the treatment appropriate must be determined by the circumstances of the individual case.

X. Y. Z. (Johannesburg).—Both funds were closed when our correspondent's contributions were received. The Editor will return the money if notice is received by July 31st. If no intimation is received by that date the amount will be paid to the British Medical Benevolent Fund, which has upon its books a large number of very sad cases of distress among medical men and their families.

M.B. 1897.—Before proceeding to the Edinburgh M.D. degree it would be advisable for our correspondent thoroughly to revise his clinical methods. This should preferably be done by regular attendance for two or three months in the wards of a hospital. As literature, *Physical Diagnosis*, by Da Costa, and *Clinical Methods*, by Hutchison and Rainy, along with any modern system of medicine, may be recommended.

Royal Navy Medical Service.

Napier asks as to the advisability of a newly qualified man of average talents entering the Royal Naval Medical Service.

*** This is a difficult subject to give advice upon until the recommendations—if any—of the committee presided over by Sir John Durnford last year are approved and brought into force. One great advantage of the Naval Medical Service is that men who enter and find they are disappointed can leave the service at the end of four years with a gratuity of £500 in addition to any money they may have saved from their pay. They will have seen a good deal of life under pleasant conditions, and it is not too late to enter into practice. Very few young medical officers leave at the end of four years, as for the young man the life is most certainly a pleasant one.

Ignorant.—(1) Candidates for the medical service of the Royal Navy must not have more than ten deficient or defective teeth, and they must possess some sound opposing molars and incisors on both sides. This rule is not rigidly adhered to if the remaining teeth are in good condition or can be made so. Teeth which can be rendered serviceable by dental repair may be considered efficient. (2) No money is given towards the initial outfit.

Cold Hands.

Dr. A. L. Martyn (Hartland, North Devon) writes: In answer to "L.R.C.P." (British Medical Journal, 1909, vol. ii, p. 1508), who asks for a method of keeping cold hands warm when on his visiting round, let him procure two pairs of lambskin wool-lined gloves, loose fit, and always wear a pair each day, the reserve pair to be hung in a moderately drying atmosphere with the fingers down, wrist end up and open. Since adopting this plan the drawback of cold hands has gone entirely even on the coldest rounds. These gloves are equally good for saddle purposes, and are supplied by Andersons, of Victoria Street, E.C.

Insurance under the Workmen's Compensation Act.

L.—If a nurse employed by a medical man met with an accident while cycling for her own pleasure there would be no liability on her employer, who could not be called upon to pay medical expenses or wages during the time of her incapacity; the insurance company therefore would not be liable, as under the policy it simply agrees to relieve the employer of his legal responsibility. On the other hand, if the nurse were cycling on an errand for her employer, he would be liable, and it would follow that the insurance company would be liable in the terms of its policy. In this answer it is assumed that the inquirer is insured through Medical Insurance Committee, 429, Strand, W.C.

LETTERS, NOTES, ETC.

The Danger of Arylarsonates.

Dr. S. J. Ross (Bedford) writes: I think that the profession owes a deep debt of gratitude to Mr. Lane for bringing to its notice the unfortunate case of double optic atrophy following the employment of arylarsonates which occurred in his own practice. Confession is good for the soul! and forthwith, Dr. Heard records a case in which a progressive impairment of vision followed the careful administration of soamin. I also notice that in this case the patient suggested the treatment. Doubtless he has already repented. Last January a patient who was suffering from active syphilis asked me whether treatment by soamin would be a more rapid method of effecting a cure in his case than the measures usually adopted. I told him that I was on sure ground when adopting the usual method of treatment, and that treatment by soamin was still in the experimental stage. Mr. Lane's case has fortified me in the opinion I then expressed, though Colonel Lambkin thinks that these toxic cases are quite accidental. There is, however, a very practical question arising out of this subject. If a gentleman of Mr. Lane's standing draws the attention of a representative of a firm of pharmacists of repute to the fact that a serious disaster has followed the use of one of their preparations, then the fact should be emphatically announced to every member of the profession who has received an intimation of the introduction of the drug as a new method of treatment. One deplores the growing tendency of lay papers to bolster up every new form of treatment even though it is still in the experimental stage. Our motto when dealing with new therapeutical measures must be *Festina lente!*

The Intestinal Stitch.

Dr. F. Gregory Connell (Oshkosh, Wis.) writes: Because of the wide circulation and the deservedly authoritative position held by the Journal, I beg leave to draw your attention to what seems to be an oversight of no small import. In an article on "The Intestinal Stitch," by E. Ken Herring, in the Journal of February 26th, p. 496, one finds fundamental principles and methods of carrying these into effect that are strikingly different from those which are generally adopted in America. The principles underlying intestinal suturing may be reduced to the following statement—a *secure* stitch, causing *perfect* sero-serous apposition. A stitch to be secure must include the submucosa. This was first demonstrated by S. D. Gross in 1843, and emphasized by Halsted in 1891. The impracticability of attempting to include but a part of the submucous layer, and therefore the necessity of including all coats of the bowel wall in order to have a secure stitch, was demonstrated by the writer in 1901 (*Journ. Amer. Med. Assoc.*, October 12th, 1901). Mr. Herring's close attention to the direction of the fibres of the musculature will not result in a secure stitch unless the submucosa is included in its bite; and, under such circumstances, it will be immaterial whether the needle points longitudinally, transversely, or obliquely to the muscular fibres of the bowel wall. A broad serous approximation is unnecessary if the serous apposition is perfect. It is only as a safeguard against imperfect apposition that broad serous surfaces are apposed. This was strongly emphasized in 1894 by J. B. Murphy in the dictum, "A line of approximation is as good as half an inch." The omission of any reference to the submucous coat in speaking of methods of intestinal suturing is sufficient to call for this brief communication.

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Note.—It is against the rules of the Post Office to receive *postes Restante* letters addressed either in initials or numbers.